American Journal of

PUBLIC HEALTH

and The Nation's Health

PRELIMINARY PROGRAM

The 84th Annual Meeting
Convention Hall
Atlantic City, N. J.
November 12–16

SEPTEMBER, 1956

volume 46

number 9

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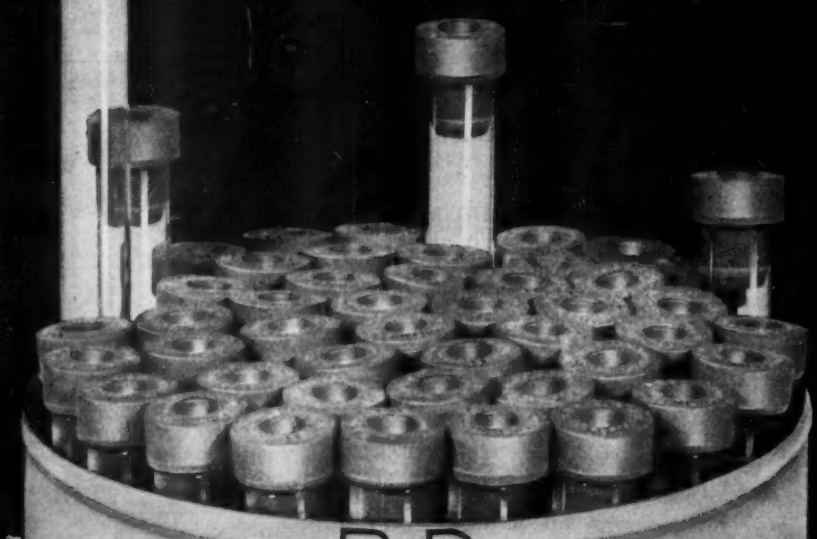

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American Journal of

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and the Nation's Health

Official Monthly Publication of the American Public Health Association, Inc.

Volume 46 | September, 1956 | Number 9

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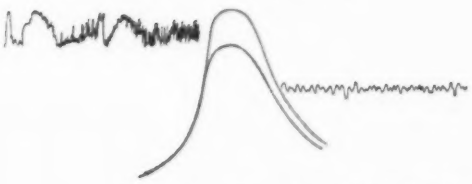

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1. Doyle, P. J., and Livingston, S.: J. Pediat. *43*:413 (Oct.) 1953.
2. Livingston, S., and Petersen, D.: To be published.
3. Pence, L. M.: Texas State J. Med. *50*:290 (May) 1954.

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1. Woodruff, C.: J.A.M.A. 161:448, 1956.
2. Mack, P. B.: Conf. on Res. in Med., Lakeland, Fla., Mar., 1954

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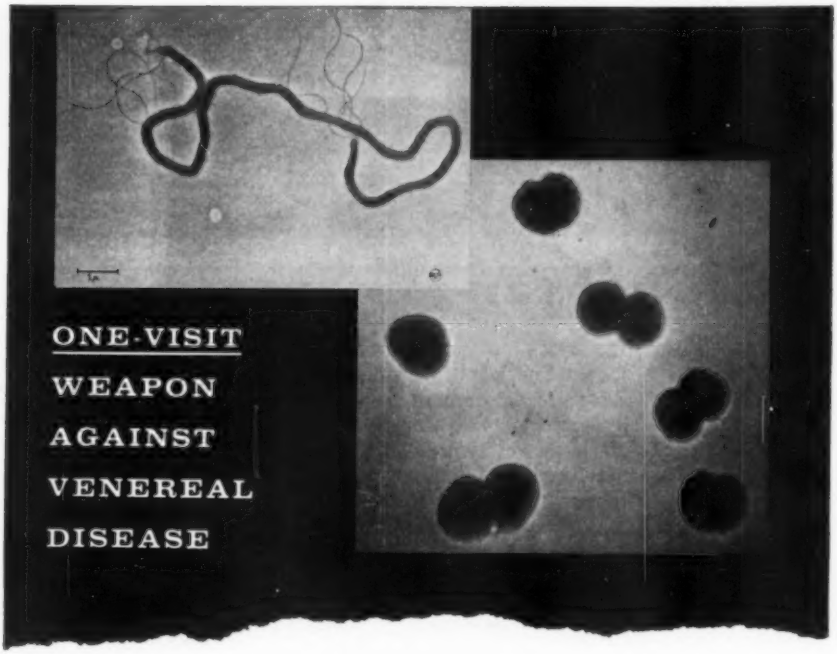

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1. Smith, C.A., and others: Am. J. Syph., Gonor. & Ven. Dis. *38*:136 (March) 1954. 2. Council on Pharmacy and Chemistry. New and Nonofficial Remedies. J. B. Lippincott Co., Philadelphia, 1955, p. 166.

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1. Goodman, L., and Gilman, A.: Pharmacological Basis of Therapeutics, New York, Macmillan, 1955, p. 1153. 2. Brown, H. W., *et al.*: J.A.M.A. *161*:515 (June) 1956. 3. Hoekenga, M. T.: World M. J. *3*: (Sept.) 1956.

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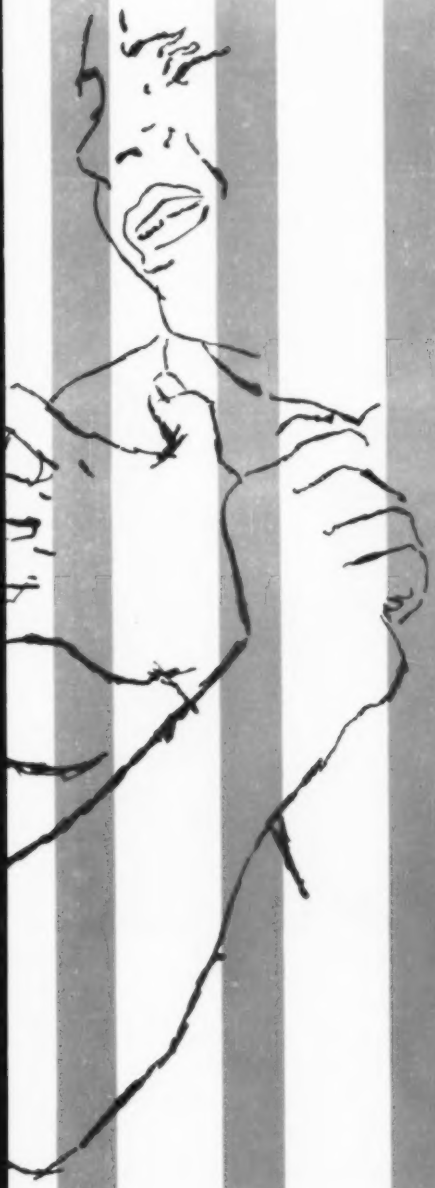

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REFERENCES:

1. Holt, L. E., Jr., and McIntosh, R.: Pediatrics, ed. 12, New York, Appleton-Century-Crofts, Inc., 1953, p. 12.
2. Kagan, B. M.; Hess, J. H.; Lundeen, E.; Shafer, K.; Parker, J. B., and Stigall, C.: Pediatrics *15*:373 (April) 1955.
3. Editorial: J.A.M.A. *159*:116 (Sept. 10) 1955.

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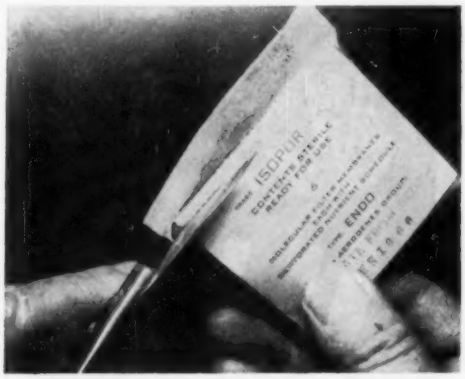

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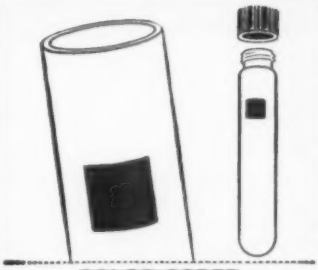

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The first three basic breakfasts provided approximately one-fourth of the daily caloric requirement, while the fourth one provided approximately 40 per cent of the total daily caloric requirement.

* *Daum, K., Tuttle, W. W., Larsen, R., Roloff, L., and Salzano, J.: Physiologic Response of Boys 12 to 14 Years Old to Different Breakfasts. J. Am. Dietet. A. 31:4, 1955.*

The Results of the Study

There was no differentiation by way of the physiologic responses studied after the consumption of similar basic breakfasts built around bacon, eggs, and milk, and around cereal and milk.

There was no differentiation between the basic and heavy breakfasts in 12 to 14 year old boys. It seems reasonable to suppose that 12 to 14 year old girls would react similarly to the boys of the same age group.

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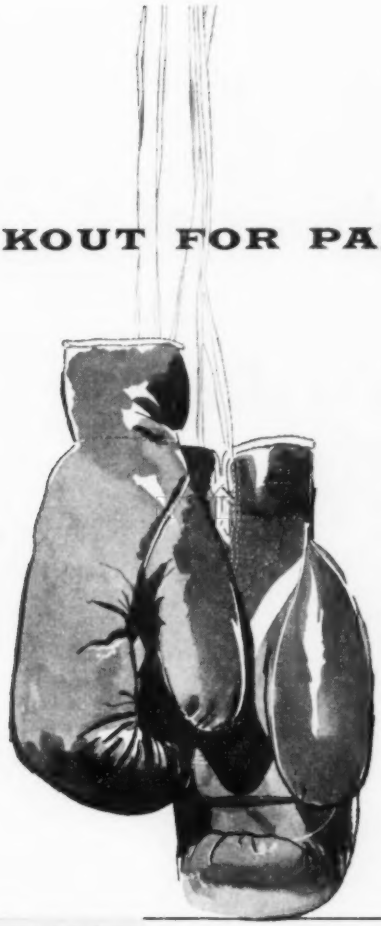

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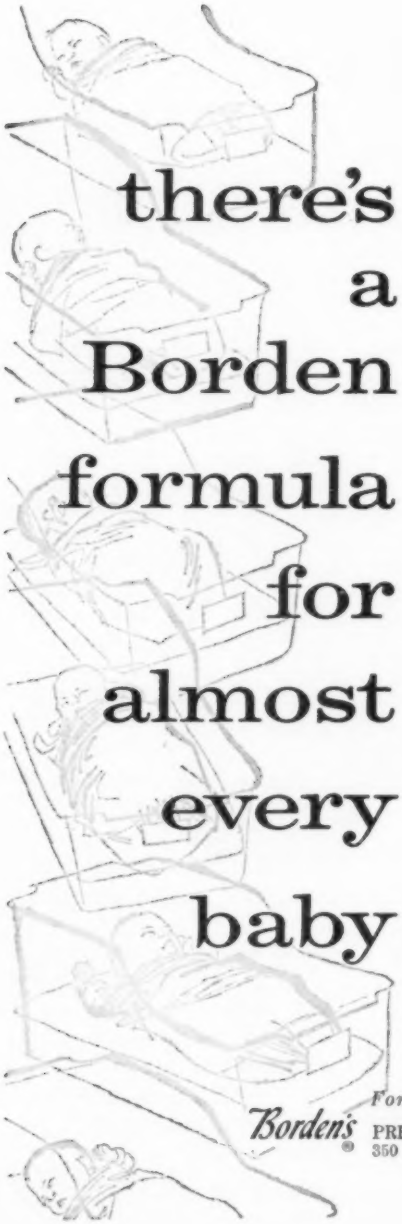

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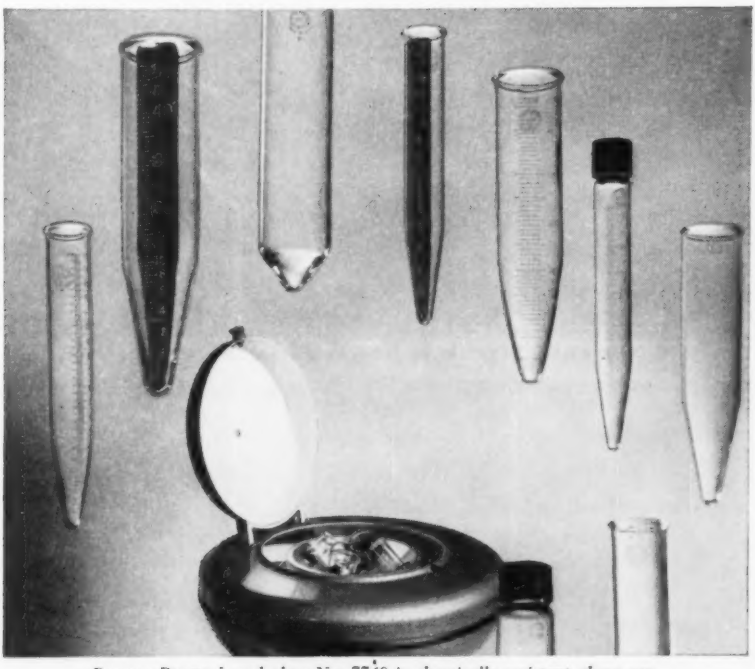

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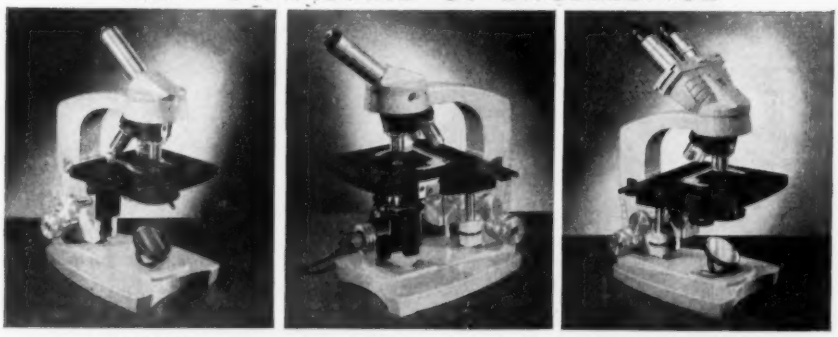

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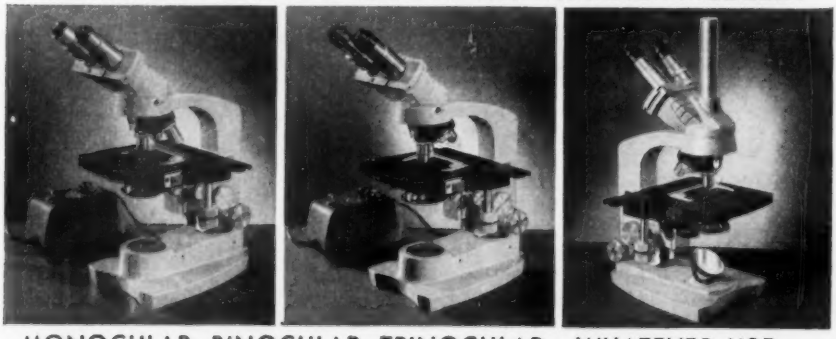

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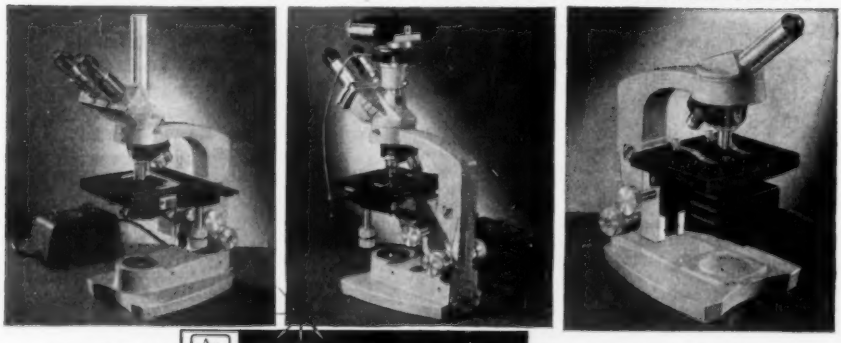

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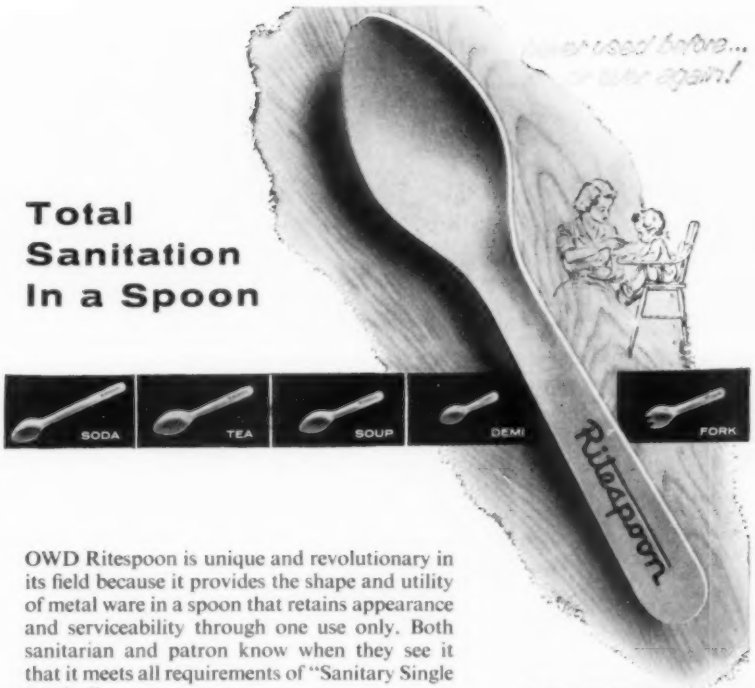

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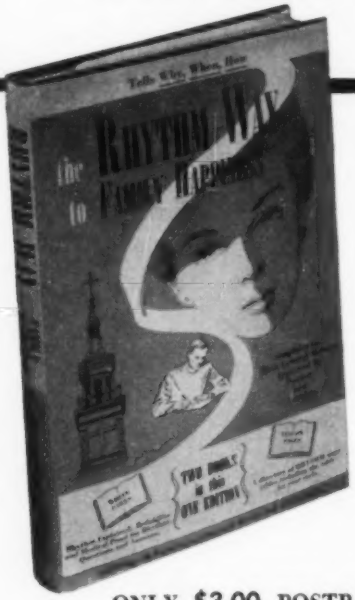

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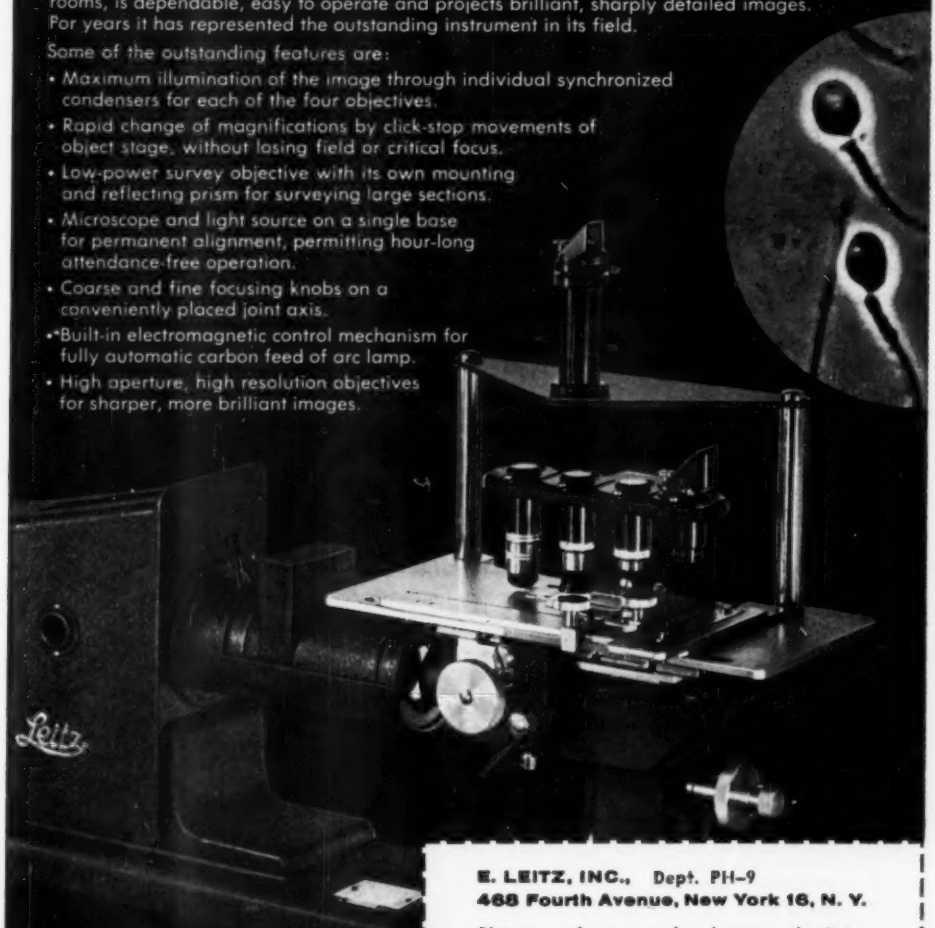

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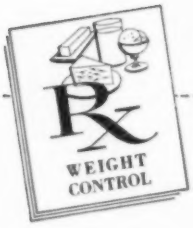

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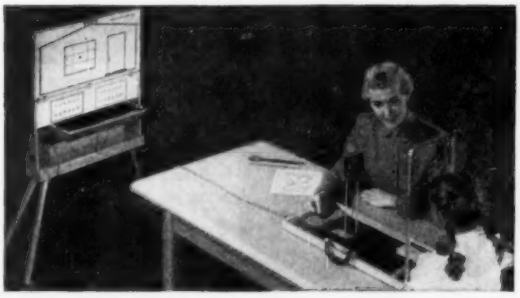

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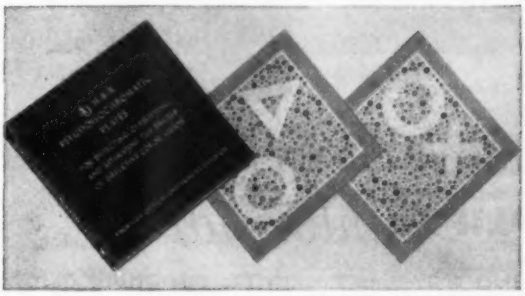

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Official Monthly Publication of the American Public Health Association, Inc.

Volume 46 September, 1956 Number 9

The Health Officer Looks at Community Organization

NATHANIEL COOPER, M.D., M.P.H., F.A.P.H.A., and ANN P. BOOTH

A health officer, turned community organizer, is prompted by his new experiences and insights to remind other health administrative personnel of certain deficiencies in professional-public-relationships which he assumes, with good reason, to be fairly common still.

We in public health are properly concerned with the question of where we are going—the theme of the 83rd Annual Meeting of the American Public Health Association. This concern is a sign of a healthy profession, critical of its goals and unwilling to be static or dogmatic.

Repeatedly in recent years we have been reminded that our people are facing changing health problems caused, in part, by the decrease in contagious illness and those changes in population characteristics that are reflected in the emergence of long-term illness, including mental disease—these being among the major public health problems of today and probably of tomorrow. In many places in this country sweeping administrative programs of environmental sanitation and immunization, based primarily on official health department action, have accomplished their desired effects in epidemic disease control.

It appears clear, at least on the basis of present knowledge of causation, that treatment and preventive measures aimed at the remaining health goals depend to a great extent on motivation of people, families, and communities to take action for solutions of their own problems. As long ago as 1922, in an address to the Michigan State Medical Society, Haven Emerson said, "It seems to me that the possibilities of administrative protection of community health have very largely reached their greatest results. I believe that preventive medicine of the future will come through the individual who personally selects a physician to see him as a patient."

This change in focus raises questions of the changes needed in health depart-

Dr. Cooper is director of health, Welfare and Health Council, and Miss Booth (formerly executive secretary of the Health Division of the council), is now assistant to the administrator, Health Careers Horizons Project of the National Health Council, New York, N. Y.

ment roles to meet the new problems presented. How can our present personnel, both professional and auxiliary, adapt to the new parts they must play if the health department is to retain its vital community role? Our leaders and advisers tell us that we must adopt the technics and practices of "community organization." Or, as the social psychologist, Fillmore H. Sanford, expressed it during the opening symposium of the APHA Annual Meeting: "In the years ahead all the health and welfare professions will have to move along a road already being explored by public health. Down this road there will be more education and less priestly mandate, more advice and less control, more consultation and less prescription, more facts and fewer arcane pronouncement."

The term "community organization" is being heard with ever-greater frequency in public health discussions. The words themselves appear readily understandable. There seems little doubt that the majority of health officers would say with assurance that they are familiar with the principles and use community organization processes regularly in practice. "So what is all the shouting about?", they ask.

The disparities in assumptions and practice came close to one of us, who recently left the field of county health administration to join the staff of a community council, thus becoming involved in the council's coordinating and planning operations. The other council staff members were trained in the field of social work and community organization. After a year of this new experience, he attempts to assess here what has been learned.

First, consider the health officer's background. Our basic discipline, medicine, is among the most authoritarian of professions in our society. With the knowledge gained through years of intensive application in fields which are vague, if not mysterious, to most people we are trained to "order," to "direct," to "instruct," or in other words, to tell people and their families, and even communities, what they need to do to bring about desirable results in health. True, we are more or less aware of the need for securing cooperation and the newer generation of physicians is being taught more about the cooperative, "team" approach in both home and community. Yet do we not still hear frequently of the "uncooperative" patient who will not follow instructions obviously intended for his own benefit? And, similarly, do we not hear about "uncooperative" communities?

The health officer's second discipline, public health practice, teaches him the principles of community health (or should we call it community disease?) and something of the ways in which community groups interact and are motivated toward desired action. Yet, what is his training "laboratory"—the classroom material? Too often it is the experience of the past, the ways in which administrative applications of sanitation, communicable disease control, laboratory epidemiology, and similar official action programs—with educational components—have met and overcome past health problems. We are steeped in the wonderful story of public health advances to date.

Certainly, we also hear of the importance of involving the community in our programs. When we are practicing public health in our jurisdictions there is not the least doubt but that most of us consciously try to get citizen and agency support for our activities. Attention is called to the word "our." It is our objectives, our school health programs, our restaurant sanitation activities, our clinics for which help is asked. How many of us have been shocked at reports of community studies revealing that the typical citizen does not even know where his local health department is located, let alone what it

does? Have we suspected that similar studies of our own communities would disclose the same unwelcome public ignorance? However, it is this same public on whom we depend for activities in support of health programs as well as for health appropriations.

Are we really aware of, and using, this tool called "community organization"? Are we accepting our new roles as "catalysts" to help our communities organize for better health? The social scientist says "no." Thanks to our recent associations with social scientists—sociologists, anthropologists, psychologists, and hybrids among them—we have begun to learn something of community processes and the forces involved in community action and interaction. This is good, but unfortunately all too often the advice of the social scientist is expressed in language with which we are unfamiliar. We find his discussions somewhat esoteric, but here and there in the literature we may find clear expressions of some of the principles and technics of community organization.

There are basic principles of community organization that we can understand and learn to use. To begin with acceptance of a certain basic philosophy, without which practice cannot be productive, is called for. The philosophy is based on greater citizen participation in the initial planning and carrying out of programs—on ultimate citizen responsibility for health activities. People often need to be stimulated to take an interest in health efforts, but when this is done we find that they have the ability to carry on. Requisite, too, is a basic belief that a group, planning together and utilizing the contributions that all can make, can arrive at the most effective solution to a problem and can produce more and better results than can any one individual working alone.

The philosophy is simple, but carrying it out requires a high degree of skill and a willingness to surrender authority which may prove difficult until one becomes accustomed to it and sees the benefits which may accrue.

Authority and Responsibility—An axiom in the community organization process is that responsibility will not be accepted by citizen groups unless real authority is ceded to them. This may become a difficult pill for the health officer to swallow. His background is authoritarian. Furthermore, his authority is supported by public health laws and regulations. He feels great hesitancy in surrendering part of that authority to a citizen group. But unless a group is made to feel that it is playing a real role in planning and action programs, and is of real and needed support to the constituted authority and the community—rather than being a rubber stamp or publicity gimmick—the group will not work effectively. Any other role may produce disgruntled citizens who feel they have wasted their valuable time. This willingness to transfer authority is, of course, dependent on the acceptance of the principle of citizen responsibility for community activities. Further, it must be accepted as a principle that a lay group should not be dominated by health professionals.

Leadership—Effective group activity is dependent on leadership within the group. The leadership role must be carefully differentiated from the directive role, the expert role, and the consultant role. The tendency for the health officer in a citizen health group is to assume the directive role. It will be found that some groups are not averse to the easy pathway of accepting an expert's direction—the "let Joe do it" attitude. This directive role must be carefully avoided, since its adoption negates the value of the community process, reduces the group to a rubber-stamp capacity, and returns the health officer to his authoritarian position without true citizen support.

The health officer may be a consultant or he may be one of many resources within or accessible to the group, but rarely may he be the leader and continue to retain the values of the cooperative effort he seeks. Yet the absence of leadership will lead to failure. The health officer should help define and find this leadership and should support it. He may even be called upon to give continuity of support in a staff or catalyst role necessary for successful operation.

Continuity—Recognition of the necessity for giving authority and responsibility to citizen groups and negation of the leadership role of the professional health person may produce a swing to the other extreme of allowing the group to operate with no service to, or continuity in, its operations, which also may prove fatal. Most of us must have seen committees fail because of lack of effective staff services. One of us recalls two school health committees in communities in a county where the difference between the highly successful operation of one over a period of years and the failure of the other after less than a year was the difference in the secretaries' recognition of the staff role. In one case the secretary took responsibility for minutes, meetings, agendas, subcommittees, and those arrangements which provide lubrication for smooth operation. In the other the secretary was simply a member of the committee, serving as secretary in name only, and with no other staff service available. Except in rare instances, committees will not continue to operate without staff service, not necessarily paid or professional staff, but someone willing to serve in this capacity. The staff person need not be the secretary; indeed, in many cases it may be preferable that the committee have its own secretary.

Direction—One of our favorite "humble pie" stories occurred when two women from Parent-Teacher Associations in a town in an adjacent county without a health unit came for help with an immunization program. The health officer had helped with one of their joint PTA health meetings on a previous occasion and was quite aware of the fact that they had no great need of an immunization campaign. At the time he was using with great enthusiasm, and at every opportunity, the new film produced by the Oklahoma State Health Department and State Medical Association, entitled "School Health in Action," which most of us know as an excellent depiction of the advantages of school health councils. Instead of a school immunization program, the need for which—as he pointed out from his "expert" knowledge—was doubtful, the health officer suggested that they should focus on arousing community interest in the formation of a school health council which would then lead to an orderly study of school health needs and their fulfillment. After much discussion they agreed to the plan, but rather reluctantly. The secretary of the State Health Council, whose aid had been enlisted, and the health officer, imbued with proper missionary spirit, drove 40 miles through a snowstorm to the joint PTA meeting on the appointed night. Using the film they gave enthusiastic talks on the benefits of community action for health as demonstrated in school health councils. After the meeting they complimented each other on how well they had covered the subject and sold the idea to the community.

Result? Without their help the PTA's proceeded with their original plans and organized an immunization campaign and program which the expert "knew" they did not need.

We have all heard that we should start with people where they are and move at the pace they will adopt, but it can be exasperating when people will not listen to the entirely logical arguments of the "expert" and cannot com-

prehend the simplest facts! After his nose has been rubbed in the dirt a few times a health officer becomes a little less of an expert, a little less anxious to direct the path of a community group, and a little more willing to go along with them, calling their attention as occasions arise to unmet health needs and other health problems.

Summary

If citizen participation in planning and action for health improvement is accepted as an essential component of public health programs, and if health departments are to continue their vital roles in the health movement of the future, we health officers must learn and practice "community organization." It is not so mysterious as some, perhaps, would have us believe, but it does demand a recognition of basic principles and continued attention to details that are not necessarily part of the present training of the physician who has become a public health officer.

The technics of community organization should be made a part of the training of the health officer if he is to carry out effectively the public health programs of the day and for tomorrow. Social sciences are being incorporated in the curriculum of progressive schools of public health. Through some sort of extension or inservice educational process they should be made available to "working" health officers, too.

1957 Roberts Fellowship Competition

The Fellowship Committee of American Journal of Nursing Company is now accepting applications for the 1957 Mary M. Roberts Fellowship in Journalism. This is the eighth in the series of Roberts Fellowships established in 1950 as a special tribute to its distinguished editor emeritus, Mary M. Roberts. The basic purpose of the fellowship is to help professional graduate nurses acquire and develop the special writing skills they need to write about nursing and effectively interpret its special problems.

The recipient of the fellowship is granted a sum of $3,000, over and above tuition fees, to help defray the expense of one academic year of study in journalism at a recognized college or university at which the recipient wishes to study, but choice must be approved by the Fellowship Committee.

An original manuscript of not more than 3,000 words on a subject significant to nursing, specially prepared for this purpose and addressed to a specific audience, is the basis for selecting the winner by a special panel of judges. February 1, 1957, is the final date for submitting manuscript and credentials.

Application forms and complete details from the Roberts Fellowship Committee, American Journal of Nursing Company, 2 Park Avenue, New York 16, N. Y.

On the Usefulness of the Tuberculin Skin Test

MICHAEL L. FURCOLOW, M.D., F.A.P.H.A.

Presented here are the findings of surveys, made in various parts of the country, showing the prevalence of sensitivity to uniform doses of tuberculin. The author recommends that the tuberculin test be used more extensively and that, where indicated, it be accompanied by other skin tests for histoplasmin, blastomycin, and coccidioidin.

The discovery of tuberculin by Koch in 1891 instituted a so-called Therapeutic Era. This era was ushered in by attempts at therapy of tuberculosis by the use of tuberculin. Very shortly thereafter reports of unfavorable effects began to appear and the therapeutic era quickly faded out, although it is interesting to note there have been some recent revivals of the use of tuberculin in tuberculous meningitis under the coverage of antibiotic drugs.

Following the therapeutic decline of tuberculin, its diagnostic and epidemiologic application became important. The diagnostic use is based on the assumption that all cases of tuberculosis react to tuberculin, and the epidemiologic use, on the assumption that a person once positive to tuberculin remains positive.

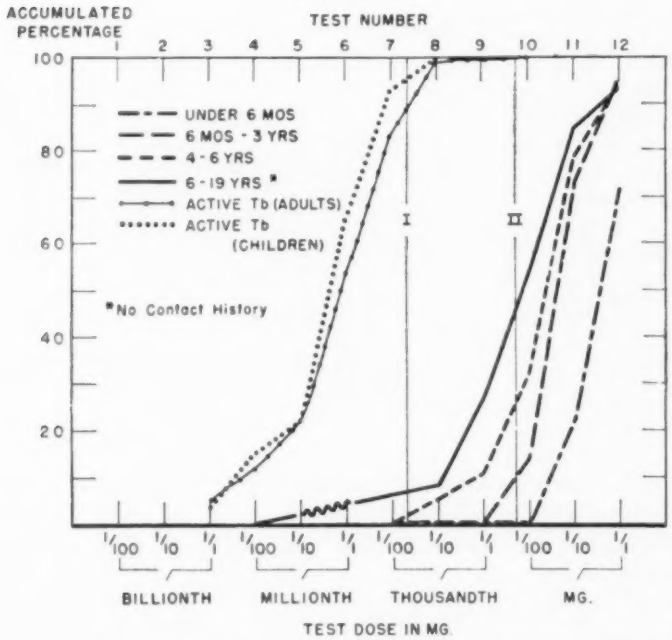
The so-called Epidemiologic Fall of tuberculin took place during the period 1935–1940, climaxed by the publication in 1939 of a paper by Lumsden, Dearing, and Brown [1] entitled "The Questionable Value of Skin Testing as a Means of Establishing an Epidemiologic Index of Tuberculous Infection." This paper showed that many persons who had calcified lesions in their lungs—at that time interpreted as evidences of tuberculous infection—did not react to tuberculin. The inference was, therefore, that tuberculin was not specific for past infections with tubercle bacilli. This led to much confusion in the minds of many physicians, and actually most graduates from medical schools since the period of 1940 have had one of three concepts about tuberculin: tuberculin is useless; tuberculin is specific in all doses; and everyone is positive to tuberculin. None of these concepts is correct.

However, there is urgent need for more epidemiologic studies in tuberculosis, as was emphasized in January, 1954, in an editorial in the American Journal of Public Health. This editorial stressed the localized nature of present-day tuberculosis and its tendency to occur in small household, neighborhood, or occupational epidemics, thus emphasizing the increasing necessity for a good epidemiologic tool. The purpose of this paper is to reemphasize the value of the tuberculin skin test as such a tool, and to present the knowledge gained by simultaneous testing with various fungus antigens.

Material and Methods

The reported surveys on the prevalence of sensitivity to tuberculin, histoplasmin, and blastomycin were conducted by one group of physicians and nurses. Ordinarily one or two physicians and one or two nurses participated in each study. All were carefully trained in uniform injection and reading technics. The tuberculin employed was of

Figure 1



NOTE: Asterisks indicating no contact history were unintentionally omitted from the three groups under six years of age.

the same lot of PPD-S, furnished by Dr. Florence Seibert of the Henry Phipps Institute, Philadelphia, Pa. The dosage was 0.0001 mg in 0.1 ml of diluent. The histoplasmin was standardized in positive human beings so that it was of uniform potency. Several different lots were used in testing, but most of the testing was carried out with one single lot (HKC-5), in a dilution of 2:1,000. The blastomycin employed was lot B-7 prepared by the U. S. Public Health Service. The coccidioidin was lot 9 furnished by Dr. Charles E. Smith of the University of California at Berkeley.

All skin tests were performed by the intracutaneous method. All readings were made at 48 hours. Measurements were made of the transverse diameter of erythema and induration. (A positive reaction is one in which the area of induration measures at least 5 mm.)

Life histories of residence were obtained on all of the individuals tested, and in determining histoplasmin sensitivity only lifetime residents—those who had spent at least 80 per cent of their lives in the county—were included. For determination of tuberculin sensitivity all persons tested were included.

Most of the studies herein reported consisted of county-wide surveys in

Dr. Furcolow is medical director and chief, Kansas City Field Station, Communicable Disease Center, USPHS, University of Kansas Medical Center, Kansas City, Kans.

This paper was presented before a Joint Session of the American School Health Association and the Epidemiology, Laboratory, and Statistics Sections of the American Public Health Association at the Eighty-Third Annual Meeting in Kansas City, Mo., November 18, 1955.

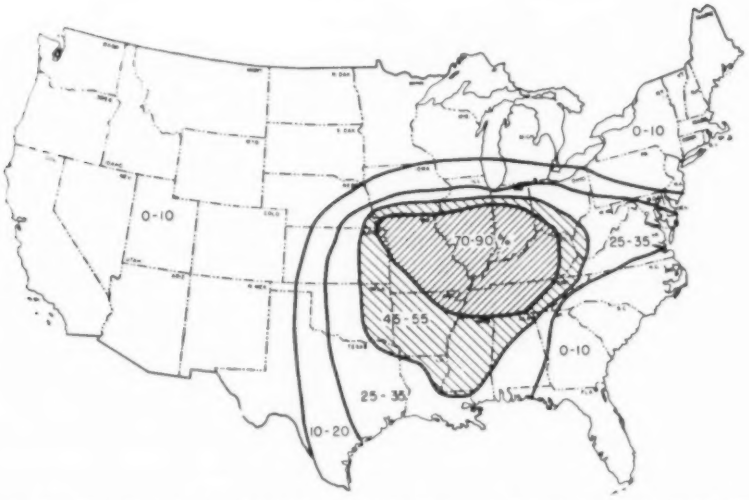


Figure 2—Histoplasmin Sensitivity in the United States—Composite of Available Data

which at least 1,000 individuals were skin tested, usually in the schools, thus giving age distribution from about five to 18. In several instances surveys were conducted in cities rather than in counties.

Results

Specificity of the Tuberculin Test—In order for the tuberculin test to be useful it must be specific. In Figure 1 is illustrated the specificity of the tuberculin test in low doses (modified from published data).[2] This graph illustrates the result of testing large numbers of persons with increasing doses of tuberculin. It is quite evident that these tests with tuberculin separate the populations into two groups, the group on the left in the graph representing adults and children hospitalized with tuberculosis. It is readily evident that persons with tuberculosis are hypersensitive to tuberculin. It is seen by test No. 8, 99.6 per cent of these patients with tuberculosis reacted to tuberculin in dosages of 0.0001 mg of PPD. The four lines on the right side of the graph illustrate the nonspecificity of tuberculin. They show that with increasing doses, increasing numbers of reactors were found to the tuberculin test among persons who had, as far as could be determined, no contact with tuberculosis. Even among infants under six months of age (mostly newborns), 70 per cent reacted to tuberculin when large enough doses were given. It is evident, therefore, that tuberculin is specific only with low doses, and that nonspecificity is evident with large doses. From material such as this it has been recommended that a dose of 0.0001 mg of PPD be employed in routine testing. No recourse to larger doses is recommended, but repeat testing with the same dose is employed in cases with doubtful results.

The specificity of tuberculin has been reinforced by the discovery that calcified lesions in the lungs are not all due to tuberculous infection. The establishment of the relationship of these calcified lesions to histoplasmin sensitivity has resulted in an increasing

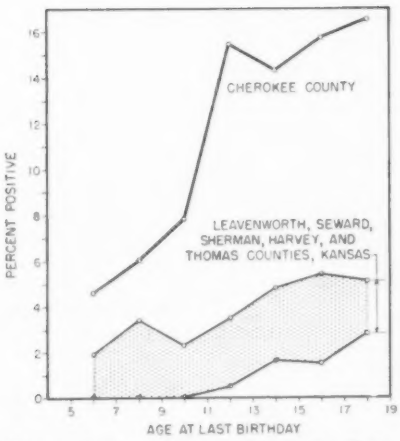


Figure 3—Age-Specific Tuberculin Rates in Kansas County-Wide Surveys

realization of the specificity of the tuberculin test.

Figure 2 illustrates the country-wide distribution of histoplasmin sensitivity based on present knowledge.[3] It is readily evident that the distribution of histoplasmin sensitivity varies markedly with different regions and that in the central part of the United States much more than half of the population is infected.

The Usefulness of Tuberculin—It has been estimated that approximately one-third of the population of the United States is infected with tubercle bacilli,[4] the rates varying in different parts of the country. In Kansas City, Mo., tests based on large numbers of persons indicate that approximately one-third of the population is infected.[5] In Minnesota reports on county-wide surveys of rural areas show 20 per cent of the population is infected.[6] It is quite evident, of course, that a much larger percentage of the population must be infected in the East, where sensitivity has long been known to be higher than in the Middle West and the West.

Tuberculin Sensitivity in the Middle West—In Figure 3 and Table 1 are shown the age-specific tuberculin rates found in county-wide surveys in Kansas. The rates in Leavenworth, Seward, Sherman, Harvey, and Thomas Counties in Kansas are very similar, varying between 0 and 5 per cent. The rates in Cherokee County in southeast Kansas are noticeably higher, reaching approximately 17 per cent by the age of 18. In Figure 4 and Table 2 are shown the age-specific tuberculin rates in counties in Texas, Ohio, Iowa, Minnesota, Missouri, and Arkansas. Except for Wright

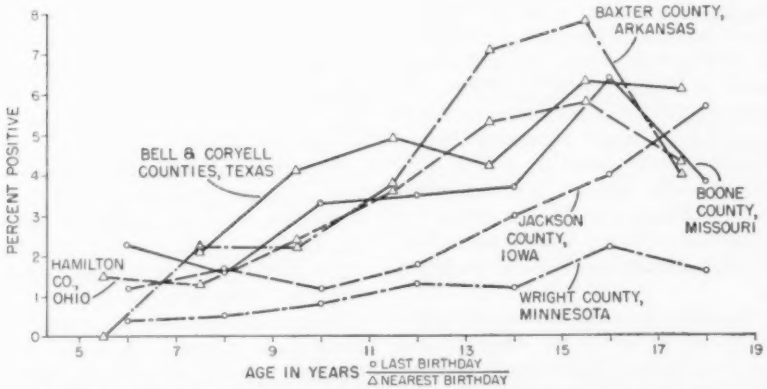


Figure 4—Age-Specific Tuberculin Rates in Counties—Texas, Ohio, Iowa, Minnesota, Missouri, and Arkansas

Table 1—Age-Specific Tuberculin Rates in Kansas County-Wide Surveys

	Age in Years Last Birthday							
	5–6	7–8	9–10	11–12	13–14	15–16	17–18	Total
				Leavenworth				
Number Tested	3	266	706	623	621	521	271	3,011
Number Positive	0	9	16	22	27	28	13	115
Per cent Positive	0.0	3.4	2.3	3.5	4.3	5.4	4.8	3.8
				Seward				
Number Tested	278	279	252	242	171	143	59	1,424
Number Positive	3	4	1	6	3	6	3	26
Per cent Positive	1.1	1.4	0.4	2.5	1.8	4.2	5.1	1.8
				Sherman				
Number Tested	213	220	242	229	229	143	72	1,348
Number Positive	4	2	4	5	10	7	2	34
Per cent Positive	1.9	0.9	1.7	2.2	4.4	4.9	2.8	2.5
				Harvey				
Number Tested	128	525	500	504	415	289	141	2,502
Number Positive	0	5	9	9	20	10	7	60
Per cent Positive	0.0	1.0	1.8	1.8	4.8	3.5	5.0	2.4
				Thomas				
Number Tested	215	260	211	222	191	130	66	1,295
Number Positive	0	0	0	1	3	2	2	8
Per cent Positive	0.0	0.0	0.0	0.5	1.6	1.5	3.0	0.6
				Cherokee				
Number Tested	130	300	319	272	272	312	145	1,750
Number Positive	6	18	25	42	39	49	24	203
Per cent Positive	4.6	6.0	7.8	15.4	14.3	15.7	16.5	11.6

County in Minnesota, and Baxter County in Arkansas, the rates are all quite similar, showing a fairly uniform rise from about 1 per cent at the age of five to about 6 per cent at the age of 18. The rates in Wright County, Minn., are noticeably lower, while those for Baxter County, Ark., are noticeably higher. Both are rural counties; one is in a northern state and one is in a southern state. Comparisons of the urban and rural and male and female rates of tuberculin sensitivity are shown in Figure 5.

In addition to determining the tuberculin sensitivity in the various areas concerned, other results can be obtained from this type of approach. Theoretical rates can be set up to see if the rates obtained by a uniform rate of infection could approximate the observed rates. As estimated from an earlier publication,[7] the children in Kansas City appear to be contracting tuberculosis infection at a fairly constant rate of 0.6 per cent per year over the ages of from six to 19.

Reference to Table 3 shows the annual infection rate obtained by testing of children in the kindergarten and retesting those negative in the first grade. (The infection rate is the percentage of children whose skin test "converts" or changes from negative to positive between the two tests.) Note that in the five-year period, 1950–1955, the observed infection rate varied from 0.7 to 1.2 per cent per year. The over-all

Table 2—Age-Specific Tuberculin Rates in Counties in Texas, Ohio, Iowa, Minnesota, Missouri, and Arkansas

	Age Last Birthday							
	5–6	7–8	9–10	11–12	13–14	15–16	17–18	Total
				Boone County, Mo.				
Number Tested	351	503	486	396	354	204	53	2,347
Number Positive	8	8	16	14	13	13	2	74
Per cent Positive	2.3	1.6	3.3	3.5	3.7	6.4	3.8	3.2
				Jackson County, Iowa				
Number Tested	267	598	599	559	528	374	264	3,189
Number Positive	3	10	7	10	16	15	15	76
Per cent Positive	1.2	1.7	1.2	1.8	3.0	4.0	5.7	2.4
				Wright County, Minn.				
Number Tested	484	1,071	992	993	830	744	427	5,541
Number Positive	2	5	8	13	10	16	7	61
Per cent Positive	0.4	0.5	0.8	1.3	1.2	2.2	1.6	1.1
				Age—Nearest Birthday				
				Bell and Coryell County, Tex.				
Number Tested	..	536	589	474	405	335	196	2,535
Number Positive	..	11	24	23	17	21	12	108
Per cent Positive	..	2.1	4.1	4.9	4.2	6.3	6.1	4.3
				Hamilton County, Ohio				
Number Tested	913	1,503	1,639	1,370	1,132	397	230	7,184
Number Positive	14	20	39	49	60	23	10	215
Per cent Positive	1.5	1.3	2.4	3.6	5.3	5.8	4.3	3.0
				Baxter County, Ark.				
Number Tested	67	323	269	319	254	217	126	1,575
Number Positive	0	7	6	12	18	17	5	65
Per cent Positive	0.0	2.2	2.2	3.8	7.1	7.8	4.0	4.1

rate among a total of 8,314 children was 0.9 per cent per year,[8] which is a little higher than the theoretical rate of 0.6 per cent per year.

In Table 4 is shown another result of the application of the tuberculin test. This is concerned with follow-up studies of household contacts of children who were tuberculin tested in the kindergarten and first grades in Kansas City, Mo.[8] The table is divided into contacts of children whose skin test "converted" (changed to positive) between the kindergarten and the first grade, and contacts of children who were positive to the first test in the kindergarten. Among 238 household contacts of converters, 1.7 per cent of new, active, previously

Table 3—Number and Percentage of White Children Whose Tuberculin Tests Were Negative in the Kindergarten and Positive in the First Grade One Year Later: Kansas City, Mo.

	Nonreactors Retested		
		Those Who Converted	
School Year	Total	Number	Per cent of Total
1950–1951	1,417	11	0.8
1951–1952	1,372	15	1.1
1952–1953	1,560	14	0.9
1953–1954	2,002	14	0.7
1954–1955	1,963	24	1.2
Combined Years	8,314	78	0.9

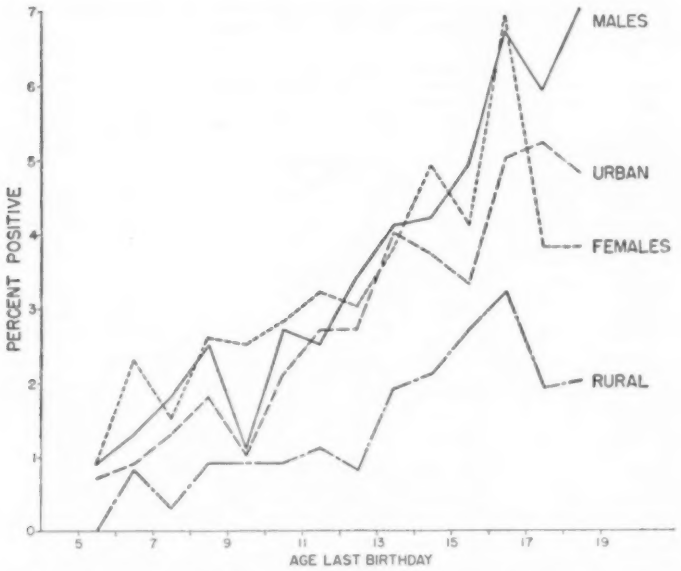


Figure 5—Comparison of Tuberculin Sensitivity Among 11,683 Men and 12,203 Women in One City and Seven Counties of Four States, and Among 6,767 Rural and 9,865 Urban Children in Seven Counties of Three States

unknown cases of tuberculosis were found. Also, it is noted that among the 1,496 contacts of 512 children who were positive on the first test, 25, or 1.7 per cent, of new, active, previously unknown cases of tuberculosis were found. It is evident, therefore, that follow-up studies of contacts of children in the kindergarten and first grade are reasonably productive of new cases of tuberculosis. Also, the follow-up of children positive on the first test is about as productive as the follow-up on converters.

Other By-Products of Tuberculin Surveys—Where tuberculin surveys are being conducted it is relatively simple to include other antigens such as fungus antigens. In certain parts of the country this is almost a necessity. In the central United States it is important that histoplasmin sensitivity be determined. In Figure 6 is shown the histoplasmin sensitivity for Boone County, Mo.,[9] Baxter County, Ark., Hamilton County, Ohio,[10] Bell and Coryell Counties, Tex.,[11] Jackson County, Iowa,[12] and Wright County, Minn.[13]

In some areas it is necessary to apply more than one fungus antigen. Figure 7 shows the percentage of positive reactors to blastomycin among children in Hamilton County, Ohio,[10] compared to the coccidioidin rates among children in Bell and Coryell Counties, Tex.[11] Though the tuberculin rates are higher than the coccidioidin rates, the histoplasmin rates are much higher than either. Studies such as this indicate that histoplasmosis is an important problem in this area of Texas, whereas coccidioidomycosis is not. They also contribute to the epidemiology of blastomycosis.

Table 4—Results of Follow-up of Household Contacts of Tuberculin Converters (First Grade) and Children Positive on the First Test (Kindergarten)

Tuberculin Status of Index Child	Household Contacts	Cases of Tuberculosis									
		Active									
		New		Known		Inactive		Pendings *		Total	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
78 Converters	154 Adults	3	1.9	2	1.3	2	1.3	1	0.6	8	5.2
	84 Children	1	1.2	..	..	1	1.2	..	..	2	2.4
	Total 238	4	1.7	2	0.8	3	1.3	1	0.4	10	4.2
512 Positive On First Test	996 Adults	16	1.6	44	4.4	6	0.6	1	0.1	67	6.7
	500 Children	9	1.8	6	1.2	5	1.0	..	..	20	4.0
	Total 1,496	25	1.7	50	3.3	11	0.7	1	0.06	87	5.8

* Suspicious of tuberculosis but final status not determined.

Discussion and Summary

This paper attempts to emphasize the practical value of the tuberculin test after first re-emphasizing the specificity of the test when used only in low or intermediate doses.

The knowledge obtained from tuberculin tests is of value to the community and to the health department in comparing the local rate of infection with that in other areas of the country. Uniform testing of school children is valuable to the health department in focalizing the problem in certain sections of the community, in certain racial groups, and in special geographic regions. While it is desirable to test persons of all ages, this presents certain difficulties and the uniform testing of school children with a uniform dosage of tuberculin appears to provide a satisfactory means of com-

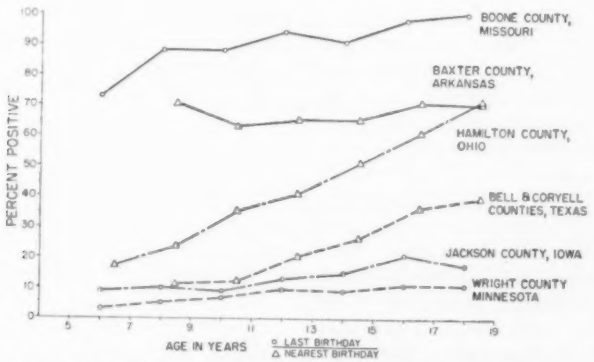


Figure 6—Age-Specific Histoplasmin Rates in Counties—Texas, Ohio, Iowa, Minnesota, Missouri, and Arkansas

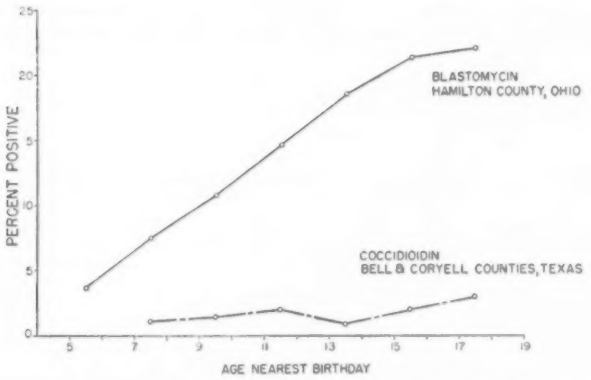


Figure 7—Age-Specific Blastomycin Rates in Hamilton County, Ohio, and Coccidioidin Rates in Bell and Coryell Counties, Tex.

paring tuberculin sensitivity in various areas. This method has been encouraged by the American School Health Association in its School Accreditization Program.

The information secured by tuberculin tests is of value to the physician also. Knowledge of the prevalence of sensitivity to tuberculin and, in most areas, to fungus antigens would appear basic to the diagnosis of pulmonary illness in any area, for it is impossible to evaluate a chest x-ray properly without knowledge of the skin test reactions. Also, the knowledge of previous tuberculin tests is indispensable in evaluating a newly found positive tuberculin test. This will be especially true if in the future the preventive treatment of tuberculin converters is accepted as a desirable procedure.

Tuberculin testing is of value to the individual, especially to those who have a morbid fear of tuberculosis. With the low prevalence of tuberculin sensitivity it is extremely reassuring to be able to tell so many patients that they do not have and have never had tuberculosis. This assurance can be given only through the use of tuberculin tests.

It would appear desirable to extend the use of tuberculin testing throughout larger areas of the country, but emphasis should be placed on careful record keeping, employment of standard doses of tuberculin, and recording of results in the literature. Also, wherever possible, cost analysis should be maintained and reported upon. In areas where financial resources are limited it might be desirable to test only certain selected age groups of school children, but they should be similar in the various areas in order to furnish uniform comparable observations. These selected groups might be aged six, 12, and 18 to give an adequate estimate of community infection.

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Oxygen and Retrolental Fibroplasia

Because of the importance of the recently confirmed facts about the causative relationship between high oxygen and the occurrence of retrolental fibroplasia in premature infants, a report of the American Academy of Pediatrics Committee on the Fetus and Newborn is reproduced with the permission of the academy.

"The accumulated evidence definitely incriminates the excessive use of oxygen as a major factor in the cause of retrolental fibroplasia in premature infants. 'Excessive use' implies concentrations of more than 40 per cent or the prolongation of administration after the indication for its use has passed. It is possible that even short periods of administration of higher concentration may be harmful.

"On the other hand, the intelligent use of oxygen can be the means of saving the lives of hypoxic, dyspnic, and cyanotic babies. It would be unwise to arbitrarily deny adequate oxygen (and perhaps life) to those babies because of possible injury to the eyes of some.

"Accordingly, the following recommendations are made:

1. Oxygen should be prescribed only on medical order the same as any drug or treatment. (Except in emergency.)
2. Oxygen should not be administered routinely but only upon specific medical indication.
3. Oxygen concentration should be kept at the lowest possible level that will relieve the symptoms for which it is given, if possible not over 40 per cent.
4. Oxygen therapy should be discontinued as soon as the indication for it has passed.
5. Ordinarily, the indications for supplemental oxygen are general cyanosis (not acrocyanosis) and dyspnea. The urgency of treating these symptoms must rest with the clinical judgment of the attending physician.
6. Oxygen concentration must be determined by means of an oxygen analyzer as often as necessary to keep it properly stabilized but at least every four hours.
7. A source which does not contain or deliver more than 40 per cent oxygen will insure against exceeding that concentration but may not be adequate in those occasional instances where higher concentration is desired. If such a restricted source of oxygen is employed, additional oxygen should be available for those special instances where it is indicated.
8. There are no apparent contra-indications to the use of supplemental oxygen in infants weighing more than five pounds."

Segregation and Discrimination in Medical Care in the United States

PAUL B. CORNELY, M.D., Dr.P.H., F.A.P.H.A.

A surveyor reports some heartening progress in the integration of Negro personnel in public health administration and medical services. He makes some recommendations for accelerating the process.

The practice of segregation and discrimination in the United States is not the particular province of any section of this country since it may be found North or South; nor has it been directed at any one specific group of the population since various racial, religious, and nationality groups have felt, or are experiencing, the effects of these practices. The writer is most conversant with segregation and discrimination as they apply to the Negro and therefore this paper will be concerned with this group in relationship to health and medical care.

Decades of Segregation and Discrimination (1930–1939 and 1940–1949)

The decade of 1930–1939 was characterized by patterns of segregation and discrimination which had been well crystallized during previous years. Segregation and discrimination had the sanction of custom and law in the South; in the North segregation, though not as overtly practiced in governmental establishments, was readily found in private agencies and was tacitly practiced and accepted. The health and medical care picture of the Negro was certainly a dismal one and a few examples will suffice to give the temper and mood of the times.

The mortality and morbidity rates of the Negro in this decade when compared to those of white individuals were disproportionately higher than at present, but health facilities continued to be allocated to them in terms of their proportion in the population rather than in terms of needs.[1] The number of Negro professional students reached its lowest ebb during the decade. For example, during the school year 1935–1936[2] there was a total of 369 medical students enrolled throughout the United States. Of these, 346 were registered at Howard and Meharry Medical Colleges, predominantly Negro schools, and the remaining 53 were enrolled in 23 northern schools. Internships were available, with the exception of one or two places, only in Negro hospitals while residencies were even fewer. Professional societies for doctors, nurses, dentists, and pharmacists did not admit Negroes in the South, and very few Negroes were found in those of the North.

The employment of Negro professional personnel in health and medical care agencies left much to be desired. Governmental and nongovernmental institutions at the federal, state, and local levels provided few opportunities for the employment of Negro professional personnel with the possible exception of nurses. The Public Health Service, for instance, in 1939 employed 8,000 professional workers and yet not more than 25 of these were Negroes and only four were on a full-time status.[3] At the state level in 1930, of seven states—Arkansas, Delaware, Kentucky, Mississippi, North Carolina, West Virginia, and Alabama—

only one employed a part-time Negro physician, three employed 29 nurses but none employed Negro dentists or dental hygienists. The same situation obtained locally.[4]

Hospital services for Negroes in 1930–1939 were at the lowest possible level. The availability of hospital beds for them, particularly in the South, was minimal as seen in the often-quoted survey of Mississippi.[5] In addition to inadequacy in numbers there were marked qualitative differences in the South. As a result many proprietary Negro hospitals made their appearance and by 1930 there were some 183 such hospitals of which about 20 were approved for intern training.[6]

Voluntary health agencies and foundations, with the exception of the Rockefeller Foundation indirectly, and the Julius Rosenwald Fund, the National Tuberculosis Association, and the American Social Hygiene Association directly, had shown little or no concern about the health of the Negro. The report of the Committee on the Costs of Medical Care, published in 1933, recommended provision of medical care and following it group hospital insurance plans began to flourish, but this in no way touched the Negro population nor were attempts made to attract him.

The first seven or eight years of the decade of 1940–1949 were not too different from the previous ones, except that there was a crescendo of voices from many quarters calling attention to the injustices and ill effects of segregation and discrimination and the need to do something about it. The National Urban League Community Relations Project initiated in 13 northern and southern cities in 1945–1946 documented conditions as already described.[7] Cobb [8] in his comprehensive report of 1947 also called attention to the inequalities and adverse pattern existing through the land. The Report of the Commission on Hospital Care also of 1947 [9] addressed itself to the provision of hospital service and the quality of care being received by Negroes and made strong recommendations for their improvement. Numerous other reports, both state and local, made their appearance between 1940 and 1948.

This increased concern about the Negro in the latter part of the decade in question grew from changes in social attitudes and the emergence of this country as an international power after World War II—which made it necessary for her to make friends with, and influence, nations of colored people. The full impact of this was not noted until the next decade but tell-tale signs could be seen in the last half of this decennium. A few may be mentioned. In 1946 the American Nurses' Association established a direct national membership for nurses who were deprived of membership in their county societies. The Baltimore City Medical Society in Maryland opened its doors to Negro doctors in 1948, and this was followed by similar actions in 1949 by Oklahoma and Missouri. The University of Arkansas in 1948 became the first of the 26 medical schools of the South to admit a Negro student. The Hospital Survey and Construction Act which became law in 1947 contained an anti-discrimination clause, though watered down by providing an alternative to satisfy the segregated pattern of the South.

These then were some of the developments which were undermining the foundations of segregation and discrimination in medical care and which heralded the advent of greater integration in the present.

Dr. Cornely is head, Department of Preventive Medicine and Public Health, College of Medicine, Howard University, Washington, D. C.

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Decade of Integration (1950 to Date)

The decade of 1950 is admittedly that of integration buttressed by the Supreme Court decision of May 17, 1954, on education. Our concern today therefore is how far we are in the first half of this period on the road to integration in health and medical care in the United States. For purposes of accuracy and completeness it would have been desirable to obtain information by personal visits to selected states. This being impossible, it was decided to inquire by means of the questionnaire method into the following four facets of health and medical care: (a) medical schools; (b) medical societies in the South; (c) Blue Cross-Blue Shield plans; and (d) hospitals and health agencies.

It is fully realized that the questionnaire method has many pitfalls, but the results in these instances may give us an indication of the trends.

Medical Schools—Questionnaires were sent to each of the 74 four-year medical schools in the United States requesting information about their total enrollments and those of Negro students for the year 1955–1956. Of the 49 schools in the North and 25 in the South, 43 and 23, respectively, replied, a total of 66. The total enrollment however for each of the eight schools that did not answer was obtained from a current Journal of the American Medical Association.[10]

The 49 medical schools in the North had a total enrollment of approximately 18,500 students as shown in Table 1. Of the 43 schools that replied, 33 had an enrollment of 171 Negro students. When contrasted with the year 1947–1948[11] it is found that the number of schools had increased by six, or 19 per cent, and the number of students by 78, or 84 per cent. Although there has been improvement in the North, the proportion of Negro students to total enrollment is woefully small. Even when the enrollment of the six schools that did not respond is subtracted from the total thus reducing it to 15,843 students, the figure of 171 Negro students is barely over 1 per cent of the total. The state of Michigan has the best experience with about 2.5 per cent. It is significant that this state has maintained this leadership for many years. It is well to keep this in mind when emphasis is placed on the lack of qualified Negro applicants.

The 25 medical schools in the South had a total enrollment of 9,103 students (Table 2). Of the 23 schools that reported, 10 including Howard and Meharry Medical Colleges, had 561

Table 1—Distribution of Medical Students in Northern States 1947–1948 and 1955–1956

States	Enrollment of Medical Students		
	1947–1948*	1955–1956	
	Negro	Total	Negro
California	11	1,341	13†
Colorado	0	294	2
Connecticut	3	320	1
Illinois	8	2,043	16
Indiana	4	585	15
Iowa	1	441	3
Kansas	0	427	8
Massachusetts	8	1,255	10†
Michigan	17	1,039	26
Minnesota	0	480	0
Missouri	0	846	4
Nebraska	1	629	12
New York	23	3,173	18‡
Ohio	6	1,228	21
Oregon	1	295	0
Pennsylvania	10	2,623	21†
Utah	0	206	0
Vermont	0	179	0
Washington	0	288	1
Wisconsin	0	714	0
Total	93	18,406	171

* Johnson, J. L. Op. cit.
† One school not included.
‡ Three schools not included.

Table 2—Distribution of Medical Students in Southern States 1947–1948 and 1955–1956

States	Enrollment of Medical Students		
	1947–1948*	1955–1956	
	Negro	Total	Negro
Alabama	0	310	0
Arkansas	0	315	8
Washington, D. C.	264	1,101	258
Georgia	0	640	0
Kentucky	0	379	5
Louisiana	0	953	0
Maryland	0	674	3
North Carolina	0	763	1†
Oklahoma	0	377	5
South Carolina	0	296	0
Tennessee	231	1,267	260†
Texas	0	1,375	11
Virginia	0	653	10
Total	495	9,103	561

* Johnson, J. L. Op. cit.
† One school not included.

Negro students. When contrasted with 1947–1948 this becomes one of the significant achievements of this decade. In that year no southern medical school other than Howard and Meharry admitted Negroes; today eight of these schools have lowered their barriers and have an enrollment of 43 Negro students. Of the 13 states and the District of Columbia with medical schools only four, Alabama, Georgia, Louisiana, and South Carolina, are without Negro enrollees. It is to be emphasized, however, that even though there has been this progressive step, the increase in the number of Negro students between 1947–1948 and 1955–1956 has only been 13 per cent and the 43 students in the eight medical schools constitute about 1 per cent of the total enrollment of 4,225 students, thus paralleling the ratio in northern schools. It is of interest to note that Arkansas, which was the first to admit Negroes to its medical school, continues to maintain the highest ratio for this group.

Medical Societies in the South—The relationship of the Negro physician to organized medicine in the South has been of much concern to all individuals interested in medical care. Questionnaires were sent to the executives of state and county medical societies listed in a 1954 roster.[12] This included 16 states, the District of Columbia, and 32 counties. Of these, 15 states, the District of Columbia, and 27 counties replied. All the 15 states, with the exception of Louisiana, now admit Negro physicians and had thus far received 197 memberships. Of the 27 counties which were distributed in all of the southern states except North Carolina, 23 admit Negroes. The four counties that do not admit Negroes are scattered in South Carolina, Tennessee, Texas, and Virginia. Thus on the basis of these data, even though information was not received from North Carolina, it may be said that all southern states with the exception of Louisiana and possibly North Carolina have opened their doors to Negro physicians. This has been another achievement in the area of race relations in medical and health care.

Two regrettable situations must, however, be noted. In the first place, although state medical societies have lowered these barriers, there are county medical societies which continue to barricade themselves against Negro membership. Second, the number of Negro doctors in the 15 state medical societies, the District of Columbia, and the 23 counties bespeaks not too well for their interest. This is well seen in a community like the District of Columbia where there are over 200 Negro physicians and only 61, or less than one-third, have thus far joined the medical society. The same situation has also been recently reported for New York City.[13] The Negro physician has a responsi-

bility in this area which he cannot lightly ignore.

A word should be said about Negro dentists and dental societies in the South, although this was not investigated. All available information indicates that at the present time not one state or county dental society is opened to Negro dentists. Since Negro nurses and pharmacists are able to join their national professional societies without going through their local units, and the doors have been opened to Negro physicians, the Negro dentist in the South remains the only member of a major health profession who still is barred from even joining his national organization, the American Dental Association.

Blue Cross and Blue Shield Plans—An effort was made to study Blue Cross and Blue Shield Plans as they relate to Negroes, but this was not too productive. The 68 Blue Shield Plans in the United States of which 41 are in the North and 27 in the South were addressed. Of these, 62 replied—37 and 25 in the North and South, respectively. All reported that membership was not separated according to race and therefore accurate figures could not be given. However, some estimates were offered. The 11 southern plans gave estimates ranging from 1 to 20 per cent of total membership. Only four of the plans gave figures between 10 and 20 per cent, while the others placed the values at 7 per cent or below.

In the North only seven plans gave an estimate, varying from one-half to 15 per cent of the total membership. All the plans (North and South, with the exception of two in the South) reported that Negro physicians if they are available are participating doctors in the surgical plans. The lack of Negro physicians was present in four of the northern and two of the southern cities replying. The major difficulties experienced by the plans as far as Negroes were concerned had to do with the cost as it related to individual memberships; the lack of appreciation for hospital care; the inadequacy of facilities; and the lack of staff privileges for physicians. It would appear that these will have to be resolved if the Negro is to receive fuller benefits from these plans.

Hospitals and Health Agencies—An inquiry into segregation and discriminatory practices in hospitals and health agencies by sending questionnaires to each establishment is fraught with obvious difficulties. Therefore, the writer took advantage of his association with the National Urban League and sent questionnaires covering hospitals, health departments, and miscellaneous matters to each of its affiliates in the United States. The staff members of each of the local Urban Leagues work closely with the community and its agencies and therefore were in a position to act as an alter ego for the investigator and thus provide more accurate information.

A questionnaire was sent to each of 60 cities, 45 in the North and 15 in the South, in which Urban League chapters are located. Filled questionnaires were received from 31 cities, of which 23 were in the North and eight in the South. The 23 northern cities are located in 15 states with a total of almost nine million persons of whom approximately 860,000 are Negroes. The range of the total population and that of the Negro varies from 25,000 to 975,000 and from 2,100 to 160,000, respectively. The eight southern cities are scattered in seven states with a little over three million persons, of whom approximately 760,000 are Negroes. The range of the total population and that of the Negro is from 87,800 to 900,000 and from 20,000 to 260,000, respectively. This sample, therefore, is deficient in two respects: namely, the absence of the larger metropolitan areas and the small number of southern cities. Nevertheless, certain trends may be observed.

Hospitals: The 31 cities (as seen in

Table 3—Number of Hospitals According to Race and Type

Area	Number of Cities	Number of Hospitals			Type of Hospitals	
		Total	White	Negro	General	Special
North	23	344	338	6	256	88
South	8	107	96	11	69	38
Total	31	451	434	17	325	126

Table 3) are served by a total of 451 hospitals of which 434 are operated by white persons and 17 by Negroes. Approximately 70 per cent of the hospitals both North and South are considered general in type. Integrated practices in the general hospitals are revealing as shown in Table 4 and 5. In the North 82.5 per cent of the general hospitals offer patient care on an integrated basis. Although the percentage for the North appears to be extremely good for these cities it may not reflect the true picture for the country as a whole. In the South only four or 5.8 per cent of the 69 hospitals admit Negroes without restrictions. Of the remaining 65 general hospitals approximately half have segregated wards, about one-third do not admit any Negroes and the rest have modifications of established segregated or discriminatory patterns. The special hospitals show a similar pattern both North and South.

The situation is somewhat different when staff affiliations are analyzed in Table 5. It is noted that opportunities for internships, residencies, courtesy, and attending staff privileges are available both in the North and South. However, in the North the number of hospitals that have opened their doors vary from 24 or 10 per cent of the total, in the case of residencies to 50 or about 20 per cent for membership on the active staff. These figures in no way approximate the 82.5 per cent of the northern hospitals that serve the Negro on an integrated basis. In the South the figures are four or 5.8 per cent in the case of internships and residencies and 16 or 23 per cent in the case of staff privileges. The larger percentage of hospitals in the latter category is due to the wider use of segregated units which facilitates the appointment of Negro physicians. In terms of special hospitals, the ones in the North follow the pattern for the general hospitals, but of the 38 special institutions in the South only one had a Negro on its staff in the capacity of an attending member. Thus it would appear from this brief purview that in the South segregation as a pattern in hospital services still is widespread. Also discriminatory practices in reference to staff affiliations for Negro doctors are prevalent in both the North and South.

Table 4—Number of General Hospitals with Integration of Patients

Area	No. of Cities	No. of General Hospitals	Integrated Hospitals	
			No.	Per cent
North	23	256	211	82.5
South	8	69	4	5.8
Total	31	325	215	66.2

Health Agencies: Health departments and voluntary health agencies were also the subject of inquiry in the Urban League questionnaires. Of the 23 cities in the North, 20 reported that the services offered by health departments are on a nonsegregated basis. The re-

Table 5—Number of General Hospitals with Negro Medical Staff Members

Area	No. of General Hospitals	No. of Hospitals with Negro Physicians			
		Interns	Residents	Courtesy	Active
North	256	31	24	46	50
South	69	4	4	6	16
Total	325	35	28	52	66

maining three stated that segregation is practiced in some facilities. Thirteen of the 23 cities reported that Negro professional personnel are employed in these official health agencies. Of the eight cities in the South, six reported segregated and two integrated services. All eight health departments employ Negro professional personnel. It would appear from this that the segregated pattern in official health agencies, which has been so prevalent in the South, still persists and possibly is one that has shown the least progress toward integration. This should be of concern to the American Public Health Association and the Conference of State and Territorial Health Officers.

The 20 northern cities answering the questions on voluntary health agencies reported a total of 200 such organizations. However, of these agencies only 33 or 16.5 per cent employ Negroes and only 33—but not the same as in the previous figure—have Negroes on their governing boards. In the eight southern cities there were 58 such organizations with 13 or 22 per cent employing Negroes and 12 having Negro representation. There would appear to be need for an opportunity for greater participation of the Negro community in the operation and formulation of policies of nonofficial health agencies.

Summary

This purview of the past 25 years, even though inadequate in a number of areas, shows that significant progress toward integration—some outstanding—has taken place. The barriers of segregation and discrimination in health and medical care have crumbled in many places. The admission of Negro medical students in southern schools, the acceptance of Negro physicians in southern medical societies, the wider degree of integration in northern hospitals, the increased opportunities for intern and residency training support this contention. However, there are still sizable islands of segregation and discrimination. These are seen in health departments throughout many areas of the South, the separate and inadequate hospital facilities for Negroes in the South, the reluctance in appointing Negro physicians to hospital staffs in the North, the resistance to Negro membership of many southern county medical societies, the attitude of voluntary health agencies which prevents Negroes from sharing in the formulation of policies and the complete block to membership in local dental societies in the South. All these and more must be eradicated if we are to achieve complete integration by the end of this decade.

Recommendations

This study suggests certain recommendations which should be helpful in achieving the desired end and these may be briefly summarized.

Federal health acts passed by Congress should contain nondiscriminatory

clauses in order to safeguard the allocation of such grants. Any federal legislation, such as the Hospital Construction Act, which makes it possible for grants to be given to states that maintain separate facilities for racial groups should be amended by having such clauses stricken from the act.

State legislatures should consider legislation to end discriminatory practices in hospitals and other health facilities. This has already been achieved in Illinois. Just as in education it may be necessary to pursue this matter through the various courts until it reaches the Supreme Court.

Federal health agencies that have the responsibility of administering grants to states should now establish administrative policies which would prevent states with separate facilities from receiving such grants. Philanthropic foundations should cease to make grants for health and medical care to states which maintain separate facilities and services for racial groups.

Health agencies and organizations have a responsibility to go on record in favor of integrated facilities and the abolition of discriminatory practices, since the achievement of this will be translated in the reduction of morbidity and mortality and an increase in the average expectation of life of the Negro. Segregation and discrimination are environmental factors and are just as damaging to health as water pollution, unpasteurized milk or smog. The American Public Health Association and certainly this Section have a responsibility in this area.

Every public health worker, whether in the North or South, ought not to accept the patterns of his community as sacrosanct, but rather should help set the wheels in motion whereby responsible community leaders can come together and work out solutions for the improvement of the health of every single individual in that community. The admonition of Parran, "We have no defense unless all are safe among us" [14] is still important today. The achievement of this will require more than routine adherence to accepted public health practices.

Integration in health and medical care is not only basic to the future of the Negro but also to that of this country. Henry Cabot Lodge, Jr., at a meeting on job discrimination recently held in Washington said: "Any shortcomings we have at home in the field of civil rights and race relations hurt us abroad. Conversely any progress we make in these matters help us abroad." [15]

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Prepaid Medical Care and Changing Needs in Saskatchewan

MILTON I. ROEMER, M.D., M.P.H., F.A.P.H.A.

The demonstration of the impact of changing economic and social conditions in a part of Canada upon the demand for, and supply of, medical services suggests the unlikelihood of our finding one final answer to our national problems of prepaid medical care.

Few acts of purely local initiative in social medicine have exceeded in their achievement of a specific objective, the municipal doctor plans of the Canadian prairies. The western municipality is not an urban center, but a geographic unit usually about 18 miles square. It is thinly settled, with a typical population in Saskatchewan of about 1,800, or five to six persons per square mile. The problem faced by settlers of these bleak flatlands was to attract and hold a doctor in the village—close enough at hand to meet sickness needs when roads were poor, vehicles few, and the wind howling.

Background of Municipal Doctor Plans

The municipal doctor plan was developed through local initiative to meet this need. Through the simple device of taxing the local residents and landowners money is raised to pay a physician a satisfactory income. Then, any resident of the municipality needing medical services not only has a doctor within reach, but can consult him without paying fees. With instability of farm incomes, it had been a struggle for the prairie doctor to survive. Prepayment was the obvious answer for both patient and doctor.

The earliest municipal doctor plan started in the rural municipality of Sarnia in Saskatchewan in 1921. The physician involved had been in local private practice for a few years and had received a small retainer from the municipality to serve the poor. Then it was decided to use tax funds for paying him a whole-time salary which would entitle everyone to care. The idea spread rapidly in Saskatchewan: it spread only slightly into Manitoba and did not take root elsewhere. The very grass roots character of the municipal doctor plan sowed the seeds of future difficulties. Conditions have changed in the prairies, as well as in the practice of medicine, and the municipal doctor pattern has not been able to keep pace with the changes. Clinging to old organizational forms in health service, as in other spheres, can deprive people of the full benefits of science. A closer look at developments in Saskatchewan over the last 35 years may point lessons for rural medical care organization throughout this continent.

Course of Developments 1921–1950

From 1921 to 1930 the plans grew from one to 32 in number.[1] Provincial legislation in 1919 had granted the municipalities the right to tax land for the purpose of engaging a physician on salary. In the grim 1930's, however, when Saskatchewan was struck with a devastating drought on top of the worldwide economic depression, the plans could not be expected to flourish. Farmers simply could not pay taxes, and special provincial grants were necessary to hold doctors in the villages. Then in 1939 the Saskatchewan Munici-

pal Medical and Hospital Services Act was enacted, authorizing municipalities to levy both land and personal taxes for health services, including prepayment of surgical operation fees and hospital care. As recovery occurred, the prepaid plans became a real boon to municipalities with many needy persons still on their rolls. Medical care to the indigent in this period was a local financial responsibility. Since it covered everyone, including the indigent, the municipal doctor scheme was thrifty and simple. By 1943 there were about 50 plans in operation.

In 1944 a new government was elected in Saskatchewan and, with the aid of Professor Henry E. Sigerist, a fresh look was taken at the entire structure of both curative and preventive health services.[2] The next year new provincial legislation was enacted to encourage the expansion of municipal doctor plans and promote good standards of service. A system of provincial grants to municipalities was instituted to be given when certain conditions were met. These included a written contract specifying the scope of services; the minimum salary for the doctor; leave for postgraduate studies; limitations on deterrent fees; and provision of preventive services. The grants were calculated according to a formula which yields higher per capita sums to municipalities with lower land assessments. A "model contract," drawn up by a committee representing the College of Physicians and Surgeons, the Association of Rural Municipalities, and the Department of Public Health, was distributed widely.[3]

With the grant program the number of plans took a spurt. By 1946 there were 58 programs receiving grants, by 1947 there were 98, and by 1950 there were 117 municipal doctor contracts aided by grants.[4] Not all municipal doctor plans, however, came up to provincial standards and applied for grants. Thus in 1950 there were actually 173 plans in operation. It must be explained that these included programs in 107 rural municipalities (out of some 300 such units in the province). The remaining 66 plans consisted of separate legal contracts which are necessary for towns and villages within the borders of the rural municipalities, just as in United States counties urban communities within their borders have discrete authority. There were at least 200,000 persons covered, constituting 24 per cent of the provincial population.

Features of the Plans

Despite the general influence of provincial standards there is great variety among these local plans of public insurance for medical care. Coverage is usually complete, but sometimes delinquent taxpayers, who are not considered indigent, are excluded. Funds are raised by personal taxes—for which there is a legal maximum of $50 per family per year—property taxes, or a combination of the two. The imposition of these taxes requires a public vote. Benefits in all plans include the diagnostic and treatment services of a general practitioner in office, home, and hospital. This is interpreted to include minor surgery and obstetrics. In about two-fifths of the plans, however, major surgery is also covered, and paid on the regular per capita basis or through fees for each operation. Most plans require payment of travel expenses by the patient for home calls (e.g., 50 cents a mile), and some impose a deterrent fee of $1 or $2 for home calls or office calls at night or

Dr. Roemer is director of medical and hospital services, Saskatchewan Department of Public Health, Regina, Saskatchewan, Canada.

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on holidays. While nearly all contracts call for preventive services, such as immunizations and examinations of school children, the extent to which these are carried out varies widely.

The rate and basis of remuneration of physicians differ widely. While an annual or monthly salary is the commonest system, it is usually computed on a per capita basis. In 1950 rates varied from $2.50 to $5.64 per capita per year for general medical service contracts, and from $3.30 to $16.52 per year for contracts including major surgery. While the early programs all involved contracts with a single doctor, half of them today involve two or more doctors. Some of the multiple-doctor plans pay on a fee-for-service basis, even for home and office calls. A half-dozen municipalities near the capital city of Regina, in fact, have subcontracts with a voluntary insurance plan under which beneficiaries have free choice of any doctor in the city—each municipality simply paying the costs of services purchased on a fee basis.

Provisions for holidays and study leave for the doctor are made in nearly all contracts, but the schedule of such arrangements differs. Likewise there are differences in requirements for termination (usually 90-day notice by either party) or for settlement of disputes. In nearly all cases the municipal council is the contracting body, but in a few instances two or three adjacent rural or urban municipalities negotiate a medical contract. Thus, within the broad definition of municipal doctor plans there are many differences in the coverage, benefits, costs, and administration.

Developments 1950–1955

With the end of the war and unprecedented prosperity in the Canadian prairies the foundations of many municipal doctor plans were shaken. There were great improvements in roads and an enormous increase in rural families with automobiles. Becoming less isolated, rural people tended to look more to the cities for their medical care. Rural people, bombarded with popular writing about modern medicine, became less satisfied with the services of the country doctor and demanded the skills of the city specialist.

The costs of living rose, and with them the costs of medical care. Doctors on municipal contracts naturally demanded higher remuneration. The provincial grants, which in 1945 had subsidized on the average about a third of the costs of an approved plan, declined so much in their financial impact that by 1955 they were supporting hardly 5 per cent of average costs. Many plans stopped bothering to apply for grants. Meanwhile, in 1947 the Saskatchewan Hospital Services Plan was inaugurated, removing economic barriers from hospitalization anywhere in the province, making it easy to seek medical service from the doctor in a distant city, without worry about a bigger hospital bill than would be faced in the small local hospital. In this setting it was inevitable that a prepayment plan offering free choice of doctors at any location, as well as specialist services, would provide advantages over the old municipal doctor scheme. The challenge was met by voluntary medical care insurance plans sponsored by the doctors themselves.

In Saskatchewan, as elsewhere in North America, the medical profession has looked with anxiety on the trend toward governmental organization of medical services. Unlike their American colleagues, however, Canadian doctors have responded to the situation by sponsoring prepayment plans for general medical services in office, home, and hospital, rather than simply in catastrophic or hospitalized illness. Such broad-benefit plans were developed by

physicians in the major Saskatchewan cities of Saskatoon and Regina, where local governmental prepayment did not exist. They started in 1939 and at first grew slowly. At the same time a number of consumer-sponsored voluntary medical care cooperatives were started in these two cities and other cities as well. The co-op plans made little headway, largely due to opposition from the urban physicians. One of the doctor-sponsored plans, however, had expanded by 1950 to an enrollment of 35,000 persons in the cities, and in that year, it began to seek voluntary enrollments in rural communities.

This plan acquired participation of nearly all doctors in Saskatchewan. It could offer communities, therefore, free choice of almost any general practitioner or specialist, including the local doctor who might already be in the village because of a municipal contract. To the municipal doctor, the scheme meant much higher returns, so that his favor for the idea was generally prompt. Membership was voluntary; those who did not pay received no services. Coverage required enrollment of 75 per cent of any community. Membership charges were, indeed, much higher than were taxes under the old municipal doctor scheme, but then there was free choice of doctor and access to specialist services.

To the members of many municipal councils and the municipal secretaries, who keep the wheels of local government going, the formula looked attractive. Aside from the benefits in tune with modern medicine and transportation facilities, the duties of municipal officials were lightened, and the onerous task of tax collection eliminated. Bookkeeping duties for paying a doctor were assumed by an office in Saskatoon. Members of municipal councils, furthermore, are usually the more successful large-scale farmers; they are the very individuals most inclined to seek their medical service at a distant city, rather than from the local practitioner. To soften high membership fees a few municipalities subsidized enrollments with funds from local revenues. So it is easy to see why the voluntary plans, despite their higher costs, grew rapidly. By 1955, membership in voluntary plans rose to 135,000, while in the municipal plans it had declined to 172,000.

Comment

Prepayment, of course, in almost any form is a good thing for people. One need not regret the decline of municipal doctor plans, if more appropriate schemes of prepaid medical care are developed in their place. The extension of the voluntary plans, even if partially at the expense of the local public plans, has indeed yielded a net increase in the over-all prepaid coverage for medical services.

One must look, however, at the other side of the voluntary plan cloth. Most important, the plans do not cover all persons in the community. As many as a quarter may be without coverage, and they are likely to be families of lower income. The actual tendency in many communities has been toward declining percentages of enrollment. Second, there is no assurance that a doctor will remain settled in the local community. If he does remain, he is under no obligation to give preventive services or attend the poor. Finally, the costs are extremely high—relative to plans under public auspices—and tend to become higher.

In 1955 average annual costs of voluntary community plans throughout the province of Saskatchewan were $18.50 per capita with a usual family charge of $72. Translated into incomes for doctors these rates, if earned from all patients, would yield an average gross income in excess of $21,000 for the 681 private practitioners now in the

province (after deducting the administrative expenses of the plan). This is considerably higher than current earnings of Saskatchewan physicians, according to income tax analyses.

There is, of course, public resistance to rising costs and the plan, like voluntary health insurance plans everywhere, has been compelled to introduce restrictions which would reduce expenditures. There is a $600 maximum limit on services to an individual in any one year or for any one illness. Diagnostic x-ray and laboratory examinations ordered by the physician are covered only up to $25 per year. There is no care for allergic or psychiatric conditions. When enrollment declines to under 75 per cent of a community new members are faced with waiting periods for maternity care and exclusions of preexisting conditions. Most regrettable is the policy of cancelling memberships of individuals regarded as "bad risks," and the readjustment of membership costs in communities under the slogan of "experience rating." This practice, common among commercial insurance carriers, simply vitiates the spreading effect of insurance and charges low rates where medical services are low and high rates where they are high.

All the virtues, nevertheless, are not on the side of the municipal doctor plans. In their primary aim: to hold doctors in rural communities they have been effective. Out of 681 private practitioners in Saskatchewan in 1955, some 111 are under full-time or part-time municipal contracts, and there is no question about the force of these contracts in maintaining a minimum level of rural medical service. Isolated rural practice, however, has its serious problems.

The most serious limitation is the inability of a rural general practitioner to practice the best modern medicine. Yet this is all that the municipal plan provides and the contract, moreover, often puts the physician under pressure to tackle problems beyond his competence. This is especially true when major surgery is included but, even when it is not, many country dwellers in Saskatchewan, with pioneer mud still on their boots, feel that a man is not a "real doctor" unless he can wield a scalpel. A doctor, finding such confidence displayed by the public, soon acquires a substantial ego. They are expected to do everything and soon they feel no limits to their skill. The problem is aggravated by the large number of small hospitals, units of 6, 8, or 10 beds built at the crossroads close to a thinly settled people. These are usually one-doctor hospitals and they tend to intensify the isolation of the physician who uses them.

On the other hand, a growing number of country people have become sophisticated about modern medicine and are no longer satisfied with the local doctor on a municipal contract. Even though they have paid their doctor tax, they go elsewhere for service. As a result, they pay twice for their medical care. This may help to explain the very low per capita remuneration paid to municipal doctors. The effective per capita payments, in other words, may be higher than the statistical average of $4.60 for medical and $6 for medical-surgical contracts in 1955. The doctor, however, enjoys the advantage of an assured income, a sort of local medical monopoly, and for this he is evidently willing to accept relatively modest earnings. For the young physician starting out in practice the scheme is attractive; his office investment is slight and he faces none of the competition found in the city. A common pattern, therefore, is for young medical graduates to enter a municipal contract, practice for a few years, and accumulate savings. Then, the more enterprising men leave for postgraduate studies and eventual settlement in a city as a specialist or semispecialist. The

rural community is left to find another doctor and in a few years the turnover is faced again.

With no incentive of fees, little pressure from competition, slight stimulus from colleagues, and hardly any organizational supervision, the volume of medical services rendered under municipal doctor plans is not especially high. Studies of the volume of both physician's services and hospitalization in insured and non-insured municipalities of Saskatchewan have been made. They suggest that the quality and quantity of services provided under municipal doctor plans cannot be cause for deep satisfaction by modern medical criteria. The situation is doubtless better than it would be in the total absence of prepayment, but this is obviously not enough. In its varied forms—municipal, voluntary, and regional—prepayment now covers about 45 per cent of the Saskatchewan population for all or nearly all physician's services. Even with municipal plans declining since 1950, this percentage has continued gradually to rise. The voluntary plans have solved some of the deficiencies of the municipal doctor pattern, but have introduced new and serious problems. What is the answer?

A Possible Solution

A solution to the difficulties was recognized 10 years ago in Saskatchewan when a prepaid medical care plan was organized in one of the province's public health regions.[6] This encompassed a population of some 50,000 persons in a 12,000 square mile area containing about 35 rural municipalities. All 36 physicians in the area participate in the plan, so that people have free choice of many doctors, with 50 per cent of fees paid for care by physicians not in or adjacent to the region. All residents are entitled to services (except certain beneficiaries of other programs like Indians) even if their taxes have not been paid. Under this scheme it has been possible to provide quite comprehensive medical services at an annual cost of about $14 per capita, as compared with the $18.50 per capita cost of the voluntary physician-sponsored plans.

The regional medical care scheme, as developed in the Swift Current region, is by no means perfect. While certain specialists—surgeons and a radiologist—have been attracted into the region, people still rely heavily on general practitioners even for relatively complex procedures. The pattern is undoubtedly a great improvement, however, over the municipal doctor scheme on the one hand and the voluntary scheme on the other. Like the municipal plans, the entire population is covered and control over the funds is in the hands of the people. Costs have been kept, as a result, to a level that nearly everyone can afford and, while doctors' incomes are satisfactory (the supply of physicians has improved over the years), they are not out of all proportion to the earnings of the average citizen. Like the voluntary schemes, the regional scheme provides free choice of many doctors, including referral to specialists. The quantity of medical services is considerably higher than under the municipal schemes and the quality is doubtless as good as under the voluntary schemes. In some respects the quality is better, by reason of complete support of diagnostic services in hospital outpatient departments, a system of fee assessments by an impartial regional medical health officer which tends to reduce overservicing and encouragement of preventive services. The voluntary scheme excludes periodic health examinations, while the regional scheme actually promotes them, and public health nurses feel free to refer children and adults for medical examinations at any time.

The extension of additional regional schemes will not bring the best modern medicine to the Canadian prairie dweller. As the Saskatchewan Health Survey Committee stated in 1951: "A comprehensive health insurance program should be undertaken in Saskatchewan at the earliest possible date. This health insurance program should be integrated with and built upon existing health programs which should be extended, modified, and coordinated as required, to the end that adequate health care of high quality shall be available to all residents of the province on the basis of need and without regard to individual ability to pay." [7] With the interdependence of rural areas and cities only on such a province-wide prepaid basis could the people have access to all medical skills wherever located.

Beyond province-wide or, indeed, national insurance coverage other steps are necessary for improved rural medicine in Saskatchewan. The challenge is to provide a general medical practitioner close to the people, yet working in a framework which would permit him—without financial loss—to refer cases readily to specialist care. It is the family health counselor and the guardian of day-to-day health who is needed in the villages, not the pioneer doing major surgery on the kitchen table and diagnosing all ailments without benefit of laboratory or x-ray findings. To achieve this objective rural general practitioners could be attached to medical groups. The general physician could refer difficult cases to the district clinic. Major surgery would be done only in district hospitals, but the village physician would share in the income earned by the group as a whole. There would be no fear that referral would mean "loss" of the patient to another physician.

In a sense this would be the hospital regionalization idea applied to medical practice. Steps are already being taken in Saskatchewan which may lead to eventual confinement of major surgery (except true emergencies) to the larger district and regional hospitals with adequate staff and equipment. A hospital council to promote cooperation and coordination among a dozen institutions has recently been organized on a pilot basis in one region. Provincial grants are being made to communities for construction of health centers to house the offices of general practitioners, as well as public health services. Integration of the medical services with the public health program would be facilitated by having administration of both programs under the same authority.

These are possible approaches toward a solution to the problem of rural medical care in Saskatchewan. The municipal doctor schemes, starting 35 years ago, took the essential first steps by establishing the prepayment mechanism. The voluntary, free-choice medical care plans, the regional programs, and the provincial hospitalization scheme have been extensions of this principle to changing medical science and new social conditions. But the cultural lag remains, as perhaps it always must at any point in history, and further adjustments lie ahead. The demands of an informed public will doubtless be the chief determinant of the rate of these adjustments.

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Insectivorous Bats Naturally Infected with Rabies in Southwestern United States

LT. COLONEL KENNETH F. BURNS, VC; COLONEL CHARLES F. FARINACCI, MC; CAPTAIN THOMAS G. MURNANE, VC; with the assistance of DOROTHY FRESENIUS SHELTON

Isolation and identification of rabies virus from bats taken in their natural habitats indicate the need for evaluating their importance as a reservoir and transmitter of the infection to certain terrestrial animals.

Insectivorous bats do not ordinarily ingest blood nor do they normally attack other animals unless provoked to do so. However, some of the colonial insectivorous species, particularly Tadarida brasiliensis mexicana, are known to migrate into Mexico [1] where, because of their gregarious nature, they may encounter and become infected by rabies-harboring vampire bats. The vampires are intolerant of other species and are aggressively vicious toward smaller bats.

A significant number of insectivorous species of bats have recently been reported as attacking human beings without provocation. These reports were from Florida (Dasypterus floridanus),[2] Pennsylvania (Lasiurus cinereus),[3] and Texas (Tadarida brasiliensis mexicana).[4] In addition, Sulkin [5] reported the death of a woman in Texas which was attributed to the bite of an unidentified rabid bat.

Naturally infected T. brasiliensis mexicana, while held in captivity, exhibit a marked change in their social behavior during the incubatory stages of rabies. There may be a prodromal period in which the bats are irritable, aggressive, restless, and frequently display urine incontinence and tremors. This is usually followed by a fatal progressive paralysis. During this period of deranged behavior, it is quite likely that these animals will attack without provocation.

Some of the T. brasiliensis mexicana appear to be refractive to rabies as we have netted these animals under natural conditions in Texas, and were able to demonstrate the virus in the brain and salivary glands, even though the bats exhibited no signs of illness. This is further substantiated by the fact that large numbers of T. brasiliensis mexicana have a rabies virus neutralizing substance in their blood sera,[6,7] suggesting either previous inapparent infection or clinical illness followed by recovery. Considering the significance of these observations, together with the current interest in bats and bat rabies in certain areas of the United States, we initiated a survey of bat fauna for evidence of rabic infections among these animals in the southwestern United States.

Materials and Methods

Bats Collected Under Natural Conditions—The bat fauna survey started in

Lt. Col. Burns is chief of the Virology and Veterinary Branches; Col. Farinacci is commanding officer; and Capt. Murnane is assistant chief, Veterinary Branch, Fourth Army Area Medical Laboratory, Brooke Army Medical Center, Fort Sam Houston, Tex.

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Table 1—Survey of Bat Fauna for Natural Rabic Infection in Southwest United States and Mexico

Taxonomic Classification	Geographical Location	No. of Bats Collected	Isolates Recovered from: Brain Tissue		Salivary Gland	
Desmodus rotundus murinus	San Andres Tuxtla, Mexico	2	0/2*		NA	
	Temixco, Morelos, Mexico	25	2/24		1/18	
Tadarida brasiliensis mexicana	San Antonio, Tex.	20	0/20		NA	
	Fort Sam Houston, Tex.	431	8/93	(0/47)†	0/7	(0/12)
	Kelly AFB, Tex.	7	1/4		0/1	
	Uvalde, Tex.	95		(1/19)		(0/9)
	Bracken, Tex.	69	0/1		0/1	
	New Braunfels, Tex.	43	0/43		NA	
	Fort Hood, Tex.	10	0/3			(0/1)
	El Paso, Tex.	24	0/2	(0/4)	0/2	(0/3)
	Carlsbad, N. M.	170	11/20	(0/1)	2/16	(1/2)
Tadarida brasiliensis cynocephala	New Orleans, La.	94		(1/19)		(0/19)
Myotis velifer incautus	Boerne, Tex.	42	0/42			(0/4)
	San Marcos, Tex.	4	0/4		0/4	
	Bracken, Tex.	63	0/48		0/4	(0/9)
	Fort Hood, Tex.	122	0/4	(1/24)	0/4	(0/24)
	Temixco, Morelos, Mexico	3	NA		NA	
Pipistrellus subflavus veraecrucis ‡	Kelly AFB, Tex.	1	0/1		0/1	
Pipistrellus subflavus subflavus	Camp Chaffee, Ark.	1	0/1		NA	
	Kelly AFB, Tex.	1	0/1		0/1	
Antrozous pallidus pallidus	El Paso, Tex.	10	1/10		0/10	
Aëllo megalophylla senicula	Medina Lake, Tex.	4	0/4		0/4	
Lasiurus borealis borealis	San Antonio, Tex.	6	2/6		0/5	
	Totals	1,247 /903/	25/333	(3/114)	3/78	(1/83)

* Expressed as number positive/number individuals tested.
† Results in parentheses indicate number positive/number pools tested.
‡ Obtained from a plane returning from Mexico.
NA Test not accomplished.
/ / Necropsied.

February, 1954, and is currently in progress. Our bat collections were limited to 14 geographical localities in the United States (Texas, Arkansas, New Mexico, and Louisiana) and to two localities in Mexico. A total of 1,247 bats representing nine species were collected (Table 1). Gross specimens of the insectivorous species of bats were identified by their external characteristics, and the classification was later verified.*

Twenty-five vampires (Desmodus rotundus murinus) * were collected in Temixco, Morelos, and two in San Andres Tuxtla, Vera Cruz, Mexico. Although they do not live in the United States, these mammals are of considerable interest as they appear to be increasing their range into the northern states of Mexico, which now includes the tier bordering on Texas. Therefore the vampires are a most dangerous species and may be considered a direct problem as a source of rabic infection for migrating insectivorous species of bats of the United States, particularly Texas.

Serum Collections—Serums for intracerebral neutralization tests were obtained from 688 T. brasiliensis mexicana, 94 T. brasiliensis cynocephala, 162 Myotis velifer incautus, 4 Lasiurus borealis borealis, 10 Antrozous pallidus pallidus, and 19 D. rotundus murinus. With the exception of 138 T. brasiliensis mexicana collected at Fort Sam Houston which exhibited encephalitic manifestations, all of the other animals bled were apparently healthy. The axillary blood vessels were severed and the blood collected from the axillary fossa with a tuberculin syringe.

Blood from groups of four or more bats was pooled, the serum removed and stored in a deep freeze chest (−40° C) without any preservative until tests were conducted for the presence of rabies virus neutralizing antibodies.

Demonstration of Virus—The brain of each bat was aseptically removed and divided along the longitudinal fissure. From one hemisphere a 20 per cent suspension by weight was made for intracerebral mouse inoculations, and from the other, two slides containing multiple imprints were prepared, stained with Sellers's[11] stain and examined for the presence of Negri bodies.

From a representative group of these mammals, salivary gland tissues were harvested, 20 per cent suspensions by weight were made, 1,000 units penicillin and 1 mg streptomycin per ml added, and the mixtures allowed to elute for one hour at 4° C, after which they were inoculated intracerebrally into Swiss albino (CFw) mice.

Results

Stained Imprints—Direct microscopic examination of Sellers's[11] stained imprints of brain tissue of the necropsied bats was carried out. Of the 32 isolates, representing 25 individual bats and four pools containing 16 bats, five were microscopically positive for Negri bodies in the original bat brain impressions. Considering that 29 bats were the minimum number necessary to have obtained the 32 isolates (28 brain and four salivary gland isolates), the percentage of microscopically positive bats is approximately 17 per cent. Negri bodies were observed in mouse passage material of 31 (97 per cent) of the strains of bat rabies virus. Microscopic examination of third passage material of the remaining isolate yielded inclusion bodies incompatible with Negri bodies as classically described, yet the agent was identified as rabies by intracerebral neutralization tests.

Negri inclusion bodies were observed

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in the cytoplasm of the neurons and extracellularly. The majority of these inclusions as observed in the bats and subsequent mouse passage were small, (approximately 1.5–2.0 microns) round or oval, slightly irregular in outline, acidophilic, fairly uniform in size, and with a minimum of internal structure, usually a single basophilic granule. In mouse passage the Negri inclusion bodies associated with the one L. borealis borealis and the two vampire strains of rabies were larger (approximately 3–4 microns) and many contained multiple basophilic granules.

Some variation in Negrigenesis was noted among the strains of virus studied. Comparatively speaking, many of the bat strains do not produce inclusion bodies with the frequency and characteristics observed in mice inoculated with the usual street virus recovered from rabid dogs.

Histopathology—Sections of mouse brain were prepared and stained with Harris's Hematoxylin and Eosin and Stovall and Black [13] stains. Representative mouse passage material showed typical rabies inclusion bodies with focal areas of encephalitis. These areas were characterized by destruction of neurons, satellitosis, and moderate neuronophagia. There was no evidence of the disease except around the neurons per se. There were no perivascular lymphocytic infiltrations and no glial nodules formed. Multiple groups of individual neurons were affected by the rabies inclusions and only rarely were individual neurons involved.

Isolation of Viral Agent—Brain and salivary gland suspensions either from single bats or pooled tissues of from five to seven mammals were inoculated intracerebrally into Swiss albino mice and observed for a 21-day period as previously described.[6] Sterility studies were accomplished on all bat suspensions using trypticase soy and thioglycollate culture mediums. From the brains or salivary glands, or both, of 903 necropsied bats representing nine different species, 32 strains of rabies virus were obtained (Table 1). The incubation period in the initial passage ranged from six to 16 days with the infected mice exhibiting typical symptoms of a viral encephalitis. Subsequent serial passages were readily accomplished.

Serologic Studies — Neutralization tests were conducted as previously described.[7] Undiluted and serial tenfold dilutions of bat serums were mixed in equal volume with a dilution of mouse brain suspension infected with the CVS fixed strain of rabies virus containing approximately 200 LD_{50} of the virus. Serum-virus mixtures were incubated for one hour at 37° C and one hour at 4° C, before intracerebral injection into Swiss albino mice. Five or six mice were used for each serum dilution and the test was recorded 21 days after inoculation. Survival of more than 50 per cent of the mice in the 100 LD_{50} group tested against the undiluted serum was regarded as satisfactory evidence of immunity to rabies and was designated as positive. The results were classified as equivocal if only 50 per cent of the mice survived in the 100 LD_{50} group. Tables 2 and 3 give the results of the neutralization tests.

Antibody studies on the serums of 688 T. brasiliensis mexicana bats contained in 110 pools indicate that 67 pools (61 per cent) protected against 100 LD_{50} of the rabies challenge virus standard. Five serum pools (5 per cent) exhibited equivocal results and 38 pools (34 per cent) were negative. Fifteen (22 per cent) of the positive T. brasiliensis mexicana serum pools neutralized 1,000 LD_{50} or more of fixed rabies virus per 0.015 ml. Fourteen of the 19 serum pools (74 per cent) of T. brasiliensis cynocephala exhibited rabies neutralizing substances, two were equivocal, and three pools negative. Of the 162 M. velifer incautus whose serums were con-

tained in 29 pools, seven (24 per cent) were positive and the remaining 22 pools were negative. These positive findings appear to be statistically significant, offering evidence of past experience with this disease as manifested by neutralizing antibody for rabies.

Rabies neutralizing antibody was not observed in the serums of ten A. pallidus

Table 2—Neutralizing Substances for Rabies Virus in the Molossidae of Southwest United States

Species	Source	1954 and 1955 Collection	No. of Bats	Positive *		Negative	
					Per cent		
T. brasiliensis mexicana	Fort Sam Houston, Tex.	1954 February	27	3/5	(60)	2	
		June	148	19/24	(79)	3	/ 2 /
		October	10	1/1	(100)	0	
		1955 February	41	3/4	(75)	1	
		March	70	4/6	(67)	2	
		August	15	1/3	(33)	2	
T. brasiliensis mexicana	New Braunfels, Tex.	1954 March	33	1/6	(17)	4	/ 1 /
T. brasiliensis mexicana	Uvalde, Tex.	1954 July	50	2/5	(40)	1	/ 2 /
		1955 July	25	3/5	(60)	2	
		September	20	3/3	(100)	0	
T. brasiliensis mexicana	San Antonio, Tex.	1954 November	15	1/3	(33)	2	
T. brasiliensis mexicana	Fort Hood, Tex.	1955 May	3	0/1	(0)	1	
		October	12	1/2	(50)	1	
T. brasiliensis mexicana	Bracken, Tex.	1955 May	29	4/5	(80)	1	
		July	40	5/8	(63)	3	
T. brasiliensis mexicana	El Paso, Tex.	1955 August	10	1/1	(100)	0	
T. brasiliensis mexicana	Carlsbad, N. M.	1955 September	140	15/28	(54)	13	
T. brasiliensis cynocephala	New Orleans, La.	1955 July	94	14/19	(74)	3	/ 2 /

* Expressed as number positive/number pools tested. Percentage-positive placed in ( ) parentheses.

/ / Pools exhibiting equivocal results.

Table 3—Neutralizing Substances for Rabies Virus in the Vespertilionidae of Southwest U.S.A. and Mexico, and the Desmodontidae of Mexico

Species	Source	1954 and 1955 Collection	No. of Bats	Positive *		Per cent	Negative
M. velifer incautus	Boerne, Tex.	1954 October	40	0/6		(0)	6
M. velifer incautus	San Marcos, Tex.	1955 March	4	0/1		(0)	1
M. velifer incautus	Fort Hood, Tex.	1955 March	4	0/1		(0)	1
		June	53	0/8		(0)	8
M. velifer incautus	Bracken, Tex.	1955 April	44	6/8		(75)	2
		June	15	1/3		(33)	2
M. velifer incautus	Temixco, Morelos, Mexico	1955 May	2	0/2 †		(0)	2
Antrozous pallidus pallidus	El Paso, Tex.	1955 March	4	0/1		(0)	1
		April	3	0/1		(0)	1
		August	3	0/1		(0)	1
Lasiurus borealis borealis	San Antonio, Tex.	1955 July	4	0/1		(0)	1
Desmodontidae							
Desmodus rotundus murinus	Temixco, Morelos, Mexico	1955 May	19	0/3	0/4 †	(0)	7

* Expressed as number positive/number pools tested. Percentage positive placed in parentheses.
† Individual results.

pallidus (three pools), four L. borealis borealis (one pool), and 19 D. rotundus murinus (7 pools) tested. No interpretations of these negative findings are offered due to the small number of Chiroptera examined.

Serologic tests for immunity (neutralizing antibody) to rabies must be carefully evaluated. However, it appears most unlikely that the serums tested representing an extensive geographical distribution of bat fauna would contain a heat stabile, nonspecific virus inactivator which would confuse results to such an extent as to yield 61 per cent, 74 per cent, and 24 per cent positives for T. brasiliensis mexicana, T. brasiliensis cynocephala and M. velifer incautus, respectively. Inactivation of the bat serums did not eliminate the rabies virus neutralizing substance in the blood; hence, the plausible explanation appears to be that this virus inactivator is specifically related to immunity.

Virus Identification — Intracerebral neutralization tests using the aforementioned technic performed with the virus isolated from insectivorous and hemophagous bats and the standard challenge rabies virus (CVS) against refined and concentrated antirabies serum prepared from horses hyperimmunized with fixed virus demonstrate that the fixed rabies immune serum neutralized its homologous virus and the newly isolated bat strains.

Salivary Gland Isolate Unrelated to Rabies—During the course of routine examination of bats for rabies, we isolated an atypical virus (four strains) from salivary gland tissues of 38 encephalitic T. brasiliensis mexicana collected at Fort Sam Houston, Tex.

This neurotropic virus is not neutralized by refined and concentrated antirabies serum and has a short incubation period when inoculated intracerebrally into mice. The behavior pattern of the mice inoculated with bat virus is quite different from that of mice infected with rabies. The fur becomes ruffled after the fourth day, tremors are noticed, a short period of excitation develops, and this is followed by prostration and encephalitic death of the animal within from four to eight hours.

The four strains which were recovered are apparently identical to each other. Reciprocal complement-fixation tests with known neurotropic virus antigens and antisera suggest the salivary gland virus to share some antigen common to St. Louis encephalitis virus (Hubbard strain). Relationship to no other arthropod-borne virus has been demonstrated by complement-fixation tests. This virus is partially neutralized by potent hyperimmune SLE rabbit serum, but not by antisera to Western and Eastern and Venezuelan equine encephalitis, rabies, lymphocytic choriomeningitis and encephalomyocarditis viruses.*

Discussion

Bats have an extremely wide geographic distribution, perhaps the most extensive spontaneous range among mammals. They occur on all continents except the Antarctic, and are represented in numerous continental as well as typically oceanic islands which lack other spontaneous mammals.

In the Americas there are three general groupings of bats. Based upon feeding habits, they are, the carnivorous or blood-lapping Desmodus sp. (vampire), the fruit-eating, Artibeus sp., and the insectivorous. The insectivorous bats are further grouped as colony bats (Tadarida sp.) which congregate and live in caves, attics, and belfries, and the free-living bats which live singly in trees and bushes (Lasiurus sp.). In the New World, the vampire and fruit-eating bats are confined to Latin America. The range of the vampire bat extends from South and Central America through Mexico to an area just south of the United States border.

Bats have many natural enemies, including Reptiliae and a wide variety of carnivores. Wildlife predators (skunk, raccoon, fox, etc.) commonly feed on both living and dead bats to the extent, Twente [8] speculates, that predation may be a limiting factor in bat population density. This predation factor may be of indirect significance in rabies transmission as field investigations have indicated that skunks are of considerable import in the epidemiology of dog rabies with the resulting occasional infection of man.

In this connection it is of current epidemiologic interest that practically all the animal rabies occurring in Florida has been in raccoons and foxes. Similarly, a marked increase in the incidence of rabies in wildlife, particularly the fox, was reported by Young in Texas.[9] Immediate information from California shows that a large proportion of the total (291) rabies in animals reported through October 4, 1955, was in skunks (104 cases).[12]

During the course of routine examination of bats collected in their natural

* Subsequent cross-neutralization studies conducted by Dr. W. McD. Hammon, University of Pittsburgh, indicate this virus to be more closely related to Ntaya than to other members of Group B arthropod-borne encephalitis viruses tested, more closely related to West Nile than St. Louis, and probably a distinct new entity.

habitats we have shown, through animal inoculation of brain and salivary gland tissue and histological studies, that insectivorous bats may harbor rabies and yet show no signs of illness nor abnormality in habit. Hence the belief that only bats showing abnormal behavior are infectious is fallacious. Any bite wound inflicted by a bat, unmolested or otherwise, should be regarded as possible exposure to rabies infection. Our isolations have been from free-living species (L. borealis borealis and A. pallidus pallidus) of bats in Texas as well as from the colonial species, T. brasiliensis mexicana and M. velifer incautus in New Mexico and Texas, and T. brasiliensis cynocephala in Louisiana. Scatterday [10] also demonstrated that two species of free-living bats in Florida harbored the virus of rabies asymptomatically.

Reports from Florida,[2] Pennsylvania,[3] and Texas [5] indicate that insectivorous species of bats' social instincts are at times perverted. These reported changes have been ascribed to derangement with rabies manifested by their attacks on human beings compared with a normal life in recluse. Bats showing abnormal behavior patterns, e.g., daylight flying, should be destroyed as it would probably facilitate the control and prevention of the disease.

One of the current bat rabies problems yet to be resolved is whether the present findings represent the invasion of a new host or whether such infections are only now being recognized. The fact that we have found a high percentage of bats collected over an extensive geographical area, including T. brasiliensis mexicana and T. brasiliensis cynocephala and one colony of M. velifer incautus to have neutralizing antibodies against rabies may be the result of an accumulative incidence of inapparent infection during the life span of the bats. Since rabies neutralizing antibodies persist over long periods of time, it seems plausible that we may be detecting infection in an established host rather than the current invasion of a new one, perhaps with a virus which was highly invasive but of low virulence for bats.

Fixed virus is cited as an example of "mutation" of a pathogenic agent by animal passage. It is generally held that virus fixe does not produce Negri bodies nearly so readily as does street virus, this property usually becoming lost after 25–45 passages. Pasteur showed that the virus may be intensified by successive passage through certain animals, as guinea pigs, rabbits, and cats; and weakened by passage through other species, as monkeys.

Perhaps the unbroken passage through several generations of bats has produced a modified virus, with many but not all of the physical properties of a fixed virus; hence, the infrequent Negri bodies. Certainly there is a marked difference in the readiness with which various bat strains, compared to street virus strains of rabies, produce Negri bodies.

The importance of Negri bodies in the diagnosis of bat rabies is obscured temporarily by our finding of an extremely high percentage of bat brain tissues from which rabies virus was isolated that were negative for Negri inclusions. This emphasizes the pitfalls in the identification of rabies infection in bats without recourse to animal inoculation.

Recently there has been a reported increase in sylvatic rabies in the United States paralleled by reports of widespread rabic infections among insectivorous bats. Does this suggest a current mutation of the virus as a result of exchange of virus strains with well-known terrestrial vectors of rabies, e.g., dogs, foxes and skunks, manifested by increased infectivity for bats as well as other hosts?

It is certainly surprising that within

a space of two years there have been five reported attacks on human beings by insectivorous bats, with one death resulting. It is unlikely that if this type of experience had occurred in the past that it would have gone unreported.

Summary

Two species of colonial insectivorous bats (T. brasiliensis cynocephala and M. velifer incautus) collected in Louisiana and Texas, respectively, are the first to be reported from these states as being naturally infected with rabies. In addition, two species of free-living insectivorous bats (L. borealis borealis and A. pallidus pallidus) collected in Texas were reported to be naturally infected with rabies.

Further evidence of latent and asymptomatic carriers of the virus of rabies in insectivorous bats in the states of Texas, Louisiana, and New Mexico is presented. Serums of apparently normal healthy bats representing fauna collected over an extensive geographical area revealed the presence of neutralizing antibodies for the virus of rabies in a large percentage of specimens.

An extremely high percentage of bat brain tissues from which rabies virus was isolated were negative for Negri bodies. Four strains of a bat salivary gland agent unrelated to rabies and sharing some antigen common to St. Louis encephalitis virus are reported.

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Ten Years of Community-School Health Education Workshops

ARTHUR L. HARNETT, Ed.D., F.A.P.H.A.

Any teaching project that survives a decade of practical application and ensuing critical scrutiny must have some rugged qualities and intrinsic strengths that may prove helpful in related areas of staff improvement.

The first health education workshop in Pennsylvania was offered in 1945, the same year coincidentally that marked the beginning of the comprehensive program of medical and dental examinations for school-age children in the state. Following the first series of workshops at the Pennsylvania State University through 1951, the program has continued and expanded until at the present time six workshops are given each year at colleges and universities throughout the commonwealth.

Ten years of health education workshops have emphasized quite clearly some conclusions which may help to summarize the present position of workshops in the fields of community and school health education. The workshop is an effective and unique means of health education. It provides an exchange of ideas among a group of experienced health workers and teachers. It constitutes a method of unifying and strengthening the often well intentioned, but many times ineffective efforts of individuals in many parts of the state. The workshop furthermore is a challenge for many specialists—nurses, nutritionists, physicians, dentists, psychologists, and special teachers—to share in planning programs in health education, and an opportunity also for a broadening experience so greatly needed by many teachers and specialists alike. The workshop is a means of discovering current trends and problems in health education. Finally, the workshop serves both as an excellent example and opportunity for school and community cooperation.

Characteristics of the Workshop

Ten years of workshop participation have revealed to us some characteristics which seem to be persistent and necessary for successful workshops. Organized around a selected and experienced group of participants with fairly similar interests and common problems, much of the workshop program is based on real, on-the-job situations, on the expressed interests of persons actively engaged in health education, and on proposed or projected assignments designed to bring about better learning situations for parents, children, nurses, school administrators, and health educators.

The workshop is based on the needs, problems, and interests of the participants, and they, in turn, evaluate the workshop through their own efforts. Thus, in the workshop the members do most of the talking, ask the most important questions, are the final judges of what is accomplished.

Another of the elements of successful workshops is ease of communica-

tion, between participants and staff, and perhaps even more important, among the participants themselves. The workshop—in order to be a real workshop—must be free from dictatorship or autocratic rule; it must be based on principles of democracy with free channels of communication. There is usually no fixed program with lectures and very little rigid time schedules; therefore, consultants, staff, and participants work closely in informal meetings and discussions in a problem-solving atmosphere.

Workshop procedures include the use of staff members and consultants in a number of specific areas; the use of discussion groups; emphasis on individual participation and accomplishment; the use of films, exhibits, and materials from many sources; field trips, visits to clinics, hospitals, conferences, and other points of educational interest; panel discussions; and role playing. An attempt is made to use technics in the workshop that can be effective in the participants' local situations.

Organization of the Workshops

The health education workshops are examples of school-community cooperation in action. We have a planning committee for the total workshop program. This group, known as the Inter-Agency Planning Committee, consists of representatives from the three State Departments of Health, Welfare, and Public Instruction, together with the Medical Society of the State of Pennsylvania, and the Pennsylvania Tuberculosis and Health Society. These statewide agencies contribute both time and money to the workshop program. In addition, county superintendents of schools and supervising principals aid materially in the selection of capable persons to attend the workshops. Other organizations interested in health, welfare, or guidance are urged to support the workshop program, attend meetings, and offer suggestions. Several conferences for school administrators have been planned by the Inter-Agency Planning Committee in order to acquaint principals and superintendents not only with the needs and purposes of the workshops, but also with the importance of effective action in health education.

Planning meetings are held each year usually in February for staff members and workshop directors. At this meeting plans are made, experiences shared, and consolidation and unification effected, although each workshop retains its own characteristics. Each year also evaluation meetings follow the workshop series, at which time summaries are given, reports are presented, and recommendations made for the improvement of future workshops.

Participants to the workshops are aided financially by local voluntary health agencies, such as cancer societies, heart associations, poliomyelitis chapters, medical societies and auxiliaries, and the county or city tuberculosis and health societies. These local health agencies say in effect: "We are setting aside some of the money given in drives such as the Christmas Seal, March of Dimes, Heart Fund, and Cancer Crusades, and are returning it to the local community by investing it in an educational experience for interested persons who will be in a position to improve the health education practices in a school, a home, or a community. We think this is a sound investment in education." Scholarships are available only for those persons who are vitally interested and who are ready for a workshop experience.

Dr. Harnett is in charge, Health Education, Pennsylvania State University, University Park, Pa.

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The Inter-Agency Planning Committee states that the major purpose of the workshops is to help teachers, nurses, school administrators, dental hygienists, nutritionists, workers in governmental and voluntary health agencies, and parents to play more effective and realistic roles in meeting the health needs of their schools and communities. More specifically, the more important objectives are: (1) to provide inservice health education preparation for professional personnel and community-minded citizens; (2) to develop an awareness of existing public health, school health, and mental health problems that may exist in local communities, and help participants to find ways of solving these problems; (3) to promote interest in local health resources.

Evaluation Measures

Evaluation is important in any organized learning experience, and perhaps doubly so in the workshops because of what is sometimes called a "halo effect." This halo effect may be due in part to the rich social climate of the workshop, with a tendency toward informal good fellowship, a certain amount of backslapping, and an aura of "had a fine time, glad I was here." It may be due in part also to the grateful reaction of a participant who is the beneficiary of a scholarship which includes room and board for three weeks.

Several procedures have been used as a means of penetrating the halo effect, which in itself may have valuable connotations, in spite of weaknesses as an objective evaluation measure. Some of these one will recognize as integral parts of the procedure or program of the workshop:

1. A comparison of preworkshop questions and problems with end-of-workshop findings as to how these same questions and problems were answered.

2. A measure of health information, both factual and applied, gained by each participant during the three weeks. Standardized health knowledge tests are given and discussed at the beginning and end of the workshop.

3. Evaluative statements, checks, and opinions of participants on the conduct and outcomes of the workshop, particularly in relation to the effectiveness of the group interaction.

4. A representative steering committee which meets regularly and interprets the thinking of the members of the workshop. The judgment exercised by this steering committee will be conditioned by an evaluation of present program and immediate needs.

5. Periodic summaries during the workshop, such as end-of-week reviews, to determine changes, emphasis, and direction of the workshop program.

6. A follow-up questionnaire some eight months to a year after the workshop to discover progress in attaining more remote or longer range objectives. Some workshops have had reunions or evaluation meetings to discuss strengths, weaknesses, and values in the workshop program.

Ten years of workshop experience have shown the tremendous possibilities for the improvement of teaching, the increased use of local resources, better understanding of growth and development characteristics, the recognition of deviations and defects in children, the provision of better environment, physically, socially, and emotionally, and skill in making health services more effective. Much remains to be done.

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A Dental Caries-Fluorine Study

"In the year 1945 three dental caries-fluorine studies were started, two in the U. S. A. and one in Canada. Of these, the Newburgh-Kingston study was perhaps the most interesting and ambitious . . . (here follows an excellent digest of the 10-year study. See March, 1956, A.J.P.H. pages 265–271). . . .

"Altogether a most satisfactory study and one for which we feel the whole civilised world owes a debt of gratitude to both the cities of Newburgh and Kingston, the former for, in the pioneering days of fluoridation, allowing a somewhat revolutionary form of water treatment to be applied to its water supply and to the latter for doggedly sticking to its undertaking not to change the character of its water, when so many of its neighbors were ostensibly improving the teeth of their young people by a method which for the time being they had agreed to forgo."

(Public Health, the Journal of the Society of Medical Officers of Health, London, England, June, 1956.)

Laboratory Design for Study of Infectious Disease

ARNOLD G. WEDUM, M.D.; EVERETT HANEL; G. BRIGGS PHILLIPS; and ORRIN T. MILLER

To the rather extensive series of papers dealing with prevention of laboratory-acquired infections, this discussion of fundamental requirements in design and plans for layout that have been tested in practice comes as an invaluable supplement.

Study of microorganisms highly infectious for man is conducted in many laboratories with little mechanical protection for the experimenters or for persons, such as dishwashers and clerical assistants, who may be more or less remotely connected with the project. In fact, in many infectious disease laboratories visitors, students, and other transients are given free access to the areas. This has sometimes led to infection of such persons.[1-3]

Although acquiring laboratory infections has been viewed in the past as "part of the job," legal and moral considerations currently emphasize the responsibility of the laboratory director in protecting those associated directly and indirectly with the research. For several reasons, therefore, some laboratories are reluctant to work with organisms such as Coxiella burnetii, Coccidioides immitis, Malleomyces mallei, and Russian spring-summer encephalitis virus, or to undertake microbiological experiments which, in themselves, are hazardous even though the organisms are of moderate infectivity under ordinary conditions, e.g., respiratory challenge of animals with Bacillus anthracis. Inasmuch as the respiratory route is often the normal means of infection these are undesirable handicaps to the advancement of research. Accordingly, it appears appropriate to outline some of the fundamental concepts for the design of infectious disease laboratories and accompanying equipment which have been found at this installation to work effectively in reducing or preventing laboratory infections, and to present typical designs for infectious units which may be particularly applicable for schools, universities, or small research institutions.

Previous publications describing the frequency of laboratory infections[4,5] and the hazards of certain bacteriological[6] and viral[7] technics will serve as adequate justification for certain design features recommended. Justification, also, for the use of certain laboratory equipment designed to reduce microbiological hazards can be found in the original publications. Other references pertaining to microbiological safety which have appeared subsequent to the review by Wedum[8] have been included. It is suggested that the information in this report be used to supplement standard construction guides and specifications to the extent applicable. The features described are for the purpose of limiting or controlling direct or indirect contact with infectious agents. It is intended to consider, first, the minimum design features and equipment necessary for infectious disease units, and second, to present typical designs for a small infectious disease unit. The descriptive terms used

throughout have been selected so as to be most appreciated by the microbiologist and the design engineer alike.

Design Features of Infectious Disease Units

The design features considered essential for infectious disease units are categorically separated and described as follows:

Location of Infectious Unit

If feasible, the unit should consist of a separate building not used for classrooms or noninfectious work and removed from public gathering places. However, location may be made in a large building used for other purposes, in which case a site in a remote or noncongested part of the building should be selected. Conversion of existing laboratories is recommended, but the space available and its suitability for the proposed operation must be carefully planned.

Types of Rooms Required

This depends somewhat on the type of operation, the number of laboratory personnel involved, and the subsidiary facilities available in adjoining areas. For this paper it will be assumed that the following rooms will be required: (1) locker and dressing room for storage of street clothes (clean change); (2) shower room with space for removal of laboratory clothing (contaminated change); (3) laboratory room; (4) animal room; (5) preparation room; (6) storage room; and (7) air locks.

Other rooms, such as for holding laboratory animals prior to use, may be necessary if not available outside the unit. More than one laboratory or animal room may be required. Our experience is that the need for animal room space is often underestimated. Rooms (1), (2), and (3) are essential. Storage and preparation rooms may be omitted from the unit if available elsewhere.

Floors, Ceilings, and Walls

Floors, ceilings, and walls in infectious disease laboratories should have a final surface free of cracks or crevices and capable of withstanding frequent washes with decontaminating solutions. Suspended ceilings, except in corridors are not recommended. The corrosive characteristics of the decontaminating solutions to be used should be investigated. Corrosive effects on metals, rubber, paint, or wood do not always correspond to tissue toxicity.

The construction of walls, ceilings, and floors should not allow leakage of liquids into adjoining rooms or rooms below. When concrete slab floors are involved it is important that wall curbs be poured integral with the floor to prevent liquid leakage.

The walls and ceilings of existing structures may require the application of pressure-sensitive metallic tape to seal joints between panels. If new construction is involved, concrete floors and brick or mortar walls may be finished with Keene cement plaster finish. Some of the newer type porcelain enamel panels may be suitable, but the construction must provide airtight walls and ceilings, except for interior door openings. The ceiling construction, particularly, should be tight enough to provide an effective barrier between the laboratory rooms and the "clean" rooms or "clean" attic above. As an example, it is inadvisable to have light fixtures reset into the room ceiling for servicing from the attic above because this obviously increases the difficulty of obtaining good seal between the infectious room and the "clean" attic.

Paints for walls and ceilings should

The authors are connected with the Biological Warfare Laboratories, Fort Detrick, Frederick, Md.

be resistant to the chemical disinfectants to be used. A light colored, gloss enamel, vinyl-base protective coating such as Tygon "TP" series * is recommended. Concrete floors may be painted, but if left unpainted the surface should be treated with a suitable sealing compound such as "Lapidolith," † to harden the surface and reduce the "rub-off" of concrete dust.

Windows and Doors

In designing new construction nonopening windows glazed with Thermopane should be specified. All caulking and sealing materials must withstand exposure to liquid disinfectants. In existing buildings windows should be sealed in a closed position.

All doors should have automatic door closing devices. Doors leading into contaminated rooms should be provided with glass viewing panels and clear plastic speaking diaphragms ‡ about 6″×6″ in size. The diaphragms should be easily replaceable and are apt to need protection by wire screening. This means of visual and oral communication will aid in limiting traffic into contaminated rooms. Doors through which laboratory carts are pushed should be provided with a 4-foot kick plate of 16-gauge metal sheeting.

Ventilation and Air Treatment

Room Ventilation—Air supply and air exhaust systems are essential to maintain proper air flows and pressures within the unit. Air supply ducts generally provide at least 10 changes of air per hour in each room, except where more air is needed because of the heat load. A slight negative pressure can be created by adjusting the relative amount of air supplied and withdrawn from each room. Ideally, it is desirable to maintain the entire infectious unit at a negative pressure in relation to the outside or the adjoining noninfectious areas. Within the unit increasing degrees of negative pressure can be provided; the more hazardous rooms would be negative in relation to less hazardous rooms. In this manner the direction of air flow will always be in the direction of the more dangerous room.

For conversion of existing laboratories inexpensive air exhaust blowers may be used without an air supply system. If exhaust fume hoods are provided over autoclaves or sterilizing ovens, air may be exhausted via this duct. The degree of negative pressure necessary to maintain proper air balance is on the order of 0.05–0.15 inches of water. Supply air must be controlled to provide make-up when air is being drawn from the room by ventilated cabinets (page 1107). A damper arrangement should restrict supply air when cabinets are not in operation.

By proper ventilation and the use of bacterial filters (page 1105) isolation of areas of different levels of hazard is accomplished. A system in which air is used once, filtered, and discharged to the outside is more preferable; however, in the absence of unusual hazards recirculating systems may be utilized if the air is processed through a highly efficient filter at the exhaust duct as it leaves each room. The building exhaust should be so located that exhaust air will not be immediately reintroduced into the same building through an open window or other air inlet.

Air conditioning is desirable in laboratory areas so that the air balance is not disturbed by unauthorized opening of doors or windows during hot weather. From an engineering view building heat loads are related to ventilation and must be given careful consideration. It has been our experience that heat loads due to autoclaves, heat ovens, water baths, gas burners, and

* U. S. Stoneware, Dayton, Ohio.
† L. Sonneborn Sons, Inc., New York City.
‡ Saran film No. 517, 200 gauge, Dow Chemical Company.

like equipment are often underestimated in building designs. Heat shields above autoclaves, particularly autoclaves reaching into animal rooms, are suggested (Plans II and III).

Cabinet Ventilation—Exhaust fans for ventilated cabinets should provide a minimum air flow of 50 linear feet per minute through all open spaces in the presence of the minimum filter resistance. To maintain these standards during varying conditions and increasing filter resistance it is wise to add a 20 per cent safety factor. For instance, an exhaust fan for a cabinet 72 inches long with the 10-inch glove panel removed [8] would need to supply a theoretical minimum air flow of 250 cfm against the initial resistance of approximately 2.0 inches of water from two layers of 50 FG spun glass; the working installation should provide 300 cfm against a resistance of 3.0 inches of water. If air is incinerated, decreased resistance to air flow is significant in the choice of an exhaust blower, but positioning of the blower must consider the temperature of the air that passes through the blower. Blowers should always be positioned on the downstream side of the filter or incinerator. Ultraviolet (UV) fixtures may be used in ventilated cabinets, air locks, walk-in refrigerators, incubators, and door barriers.

Treatment of Exhaust Air—Inlet air to the infectious unit may need coarse filtration (bacterial filtration efficiency of 20–50 per cent), if there is a significant load of pollen, mold, nonspecific bacteria, smoke, or dust in the outside air.

A variety of filter media are available for removing microorganisms from exhaust air. Bacterial filtration efficiencies of 90–99 per cent are acceptable for the general building exhaust provided primary filtration or incineration of air is used at the site of particularly hazardous operations. For general use filters utilizing pads of spun glass having an efficiency of 99 per cent or greater are recommended.[9] Inspection of the filter media, clamping into filter frames, and the proper seating of the frames into plenum chambers becomes important to prevent leakage of unfiltered air.

It is usually desirable to house all filters in suitable frames or plenum chambers equipped with facilities for decontamination before periodic changing of used filter media. When infectious microorganisms have been used this is essential, since the handling of dust-laden filters with entrained pathogens is a serious hazard. Dry heat or steam-formaldehyde treatment are at present the most effective means of decontaminating filters.[9] To obtain the required temperature or formaldehyde concentration during decontamination it is usually necessary to provide a damper in the exhaust line to restrict air flow. Electrically heated air at 400° F. will sterilize spun glass filters in a period of two hours. Sterilization with steam-formaldehyde is described on page 1110.

Electronic precipitation for the treatment of exhaust air, although effective, has in our experience required too much attention with consequent high maintenance costs. Adequate regular servicing is necessary to obtain rated efficiencies. Continuous oil screen filters with 50 per cent efficiency are useful as prefilters in some situations.

Incineration has the disadvantage of greater expense of installation and operation, except for comparatively small volumes of air, such as 75–90 cfm. Tests on a 75 cfm electric incinerator [10] have shown that virtual sterility of air laden with bacterial spores can be obtained at 575° F. when the exposure time is three seconds. Such an incinerator,* preceded by a coarse filter is advised for treatment of air from ven-

* H. E. Trent Company, Philadelphia, Pa.

tilated cabinets in which: (1) aerosols are deliberately created for inoculation of animals, and (2) fluid or dry-particle infectious aerosols of obvious quantity are created, such as in extensive use of a Waring blendor, preparation or weighing of dry bacteria, air from fermenter or production containers, or bacterial grinding operations.

Larger oil-fired or gas-fired incinerators are feasible when large volumes of highly infectious air must be handled, but these are not recommended except under unusual circumstances. The use of a 1,200 cfm gas-fired incinerator for the sterilization of exhaust air from an isolation area consisting of four laboratory rooms has been reported.[11]

Fans and Blowers—When calculating the size of the building exhaust fan the resistance afforded by exhaust air filters should be considered. Building exhaust and supply fans should be electrically interlocked so that the supply will shut off if the exhaust fails, but not the reverse. This is necessary to prevent pressurizing the infectious areas when the exhaust fan fails.

All infectious operations should be carried out in ventilated cabinets. Separate blowers and fans remove air from these cabinets and after primary filtration discharge it into the building exhaust air ducts. The exhaust blowers serving ventilated cabinets should be independent of the building exhaust and should continue to operate if the building exhaust fails.

Laboratory Service Equipment

Laboratory services lines supplying compressed air or gas require no treatment unless air is compressed in an infectious area. In this case the air may be passed through a bacterial filter prior to compression.

If the source of vacuum originates outside the infectious laboratory, a suitable bacterial filter should be installed where the vacuum pipe leaves the room. Pumps and motors supplying vacuum, compressed air, or refrigerant should be located outside the infectious unit, preferably in an adjoining utility room. Compressed air for ventilated suits or personnel head hoods should be drawn from air free of objectionable fumes and odors and compressed by pumps which create no oil vapors in the air. Normal ambient temperatures are satisfactory for air supplied to personnel hoods which cover only the head, but ventilated air for an impermeable suit which covers the entire body should enter the suit at a temperature of 68°–75° F. and at a relative humidity no greater than 40 per cent.

Consumption of electricity in infectious disease units is apt to be high because of the many motors, compressors, and other equipment. If ultraviolet lamps are to be employed, adequate circuits should be provided. For especially hazardous microbiological operations in which entire rooms may sometimes be accidentally heavily contaminated with a resistant organism, the electrical conduits need special attention. It has been found by experience that, with slight changes in air pressure, such contamination will escape from one room to another via unsealed electrical conduit. Therefore for these operations it is advisable to provide explosion-proof type sealing condulet filled with Chico * in conduit lines. Seals should be provided around all pipes and ducts which extend through floors, walls, or ceilings to prevent escape of microorganisms.

Because a building designed for infectious disease work is of a more permanent type structure than usual, there may be more structural opportunities for transmission of vibration throughout the superstructure. Therefore, it is suggested that particular at-

* Distributed by Crouse-Hinds Company and General Electric Company.

tention be paid to the cushioning of large motors and pumps and other machinery which may cause vibration. Motors and blowers are better placed outside the laboratory room.

Water Supplies

Drinking water should be available only from a foot-operated drinking fountain, preferably located outside the contaminated laboratories or animal rooms. Potable drinking water in the infectious unit and the general water supply of adjacent areas should be protected from possible contaminated back siphonage by an attic or basement breaktank between the drinking water—general water supply lines and the water line to the infectious unit. A mechanical backflow preventor is permissible, but less certain in its continued effective operation than a breaktank. A rubber hose connected to a water line and terminating in a sink which may accidently receive contaminated wastes is an example of a dangerous cross-connection.

Distilled water for use in the laboratory, media preparation, or dishwashing rooms is often supplied from a central water distilling apparatus and piped to the room. The still should be located in the attic for gravity flow and should not be installed in the infectious disease laboratory itself.

Waste Disposal

Unless the hazard is extreme or normal disposal methods uncertain, no treatment of human sewage from the change rooms is necessary. All other liquid or solid waste materials known to be contaminated should be sterilized by heat, e.g., autoclaving, before leaving the unit. Heat susceptible materials can be sterilized with carboxide gas (see page 1109). Potentially contaminated drainage from laboratory benches or cabinets may require treatment at about 200° F. for 30 seconds in a blowcase, depending upon the nature of experiments and the organisms under study. If a significant amount of B. anthracis gets into these drains, a temperature of 260° F. for 10 minutes is necessary. Infrequently used water discharge floor drains should contain a liquid disinfectant in the trap. All other sink and floor drains should be properly trapped and the traps kept full of water. Traps should be deep enough so that differential room air pressures will not cause them to empty by siphonage.

Ultraviolet

Germicidal ultraviolet radiation in the region of 2537A as produced from low pressure mercury vapor discharge tubes can be used advantageously in the infectious disease laboratory in a variety of ways. UV air locks and door barriers are desirable in separating areas of significantly different levels of contamination.[12] An air lock is considered to be a small empty transition room with a door at each end, constructed to create a "dead" air space between two areas. Typical air locks should be at least 8 feet long and 6 feet wide with an 8-foot ceiling height. Unshielded UV lamps should be mounted on the ceiling to provide a constant floor intensity of at least 20 microwatts per sq cm. The lamps should be controlled from a switch outside the air lock.

UV door barriers are constructed by placing UV fixtures in a channel built around a doorway opening in such a way that a narrow band of radiation screens the opening. It is often desirable to place a UV barrier around the doorway of one of the doors on a UV air lock. UV air locks and door barriers are not intended for the decontamination of surfaces, clothing, or equipment but only for the treatment of air that may pass from one area to another when doors are opened.

Placement of a suitable number of unshielded UV lamps in the ceiling of

laboratory rooms will provide considerable clean-up of infectious and noninfectious "nuisance" microorganisms during nonoperating hours. Lamps should provide a floor intensity of approximately 10 microwatts per sq cm. The design and testing of UV air locks, door barriers, and ceiling installations has been described.[13]

If window-type air conditioning units are used in infectious areas, UV lamps may be installed to provide decontamination of the recirculated air. Tests indicate UV irradiation will give a 99.98 per cent reduction of air-borne S. indica in a recirculating system with an air flow of about 310 cfm.[14] A small volume (1–10 cfm) UV air sterilizer has been described which is useful for the elimination of infectious microorganisms in air being discharged from aerated bacterial cultures or from small aerosol chambers.[15] This apparatus consists of four sealed aluminum tubes connected in series, each containing one UV lamp. UV treatment of exhaust air from rooms can substitute for mechanical filtration, but it must be realized that such treatment rarely eliminates all microbial forms. References to other uses of UV in infectious laboratories are found on pages 1109 and 1110.

Basic Safety Equipment for Infectious Disease Units

A part, at least, of the equipment and apparatus needed should be described because they, along with some special technics, are essential for the maintenance of safe working conditions in the infectious disease unit. It is evident, however, that the need for certain equipment will be determined by the infectious organism in use and the type of operation being carried out. Experiments with aerosols of infectious microorganisms, lyophilizing, drying, mixing, and grinding procedures, for example, usually are hazardous.

Ventilated Cabinets

Numerous publications on the frequency, causes, and elimination of laboratory acquired infections have led to the conclusion that the source of infection is generally within a few inches of the laboratory worker's face and that the enclosure and ventilation of the work area is the most important factor in eliminating laboratory infections. A ventilated bacteriological cabinet is a device which provides suitable table-top area for the performance of bacteriological operations and has a pane of glass between the work and the worker's face. Escape of microorganisms is prevented by an inward flow of air or a reduced air pressure within the cabinet.

A variety of ventilated bacteriological cabinets are available commercially * or can be fabricated from plywood or sheet metal. Portable cabinets of flexible plastic sheeting can be used for special operations.[16] Modular cabinet systems, comprised of stainless steel cabinets bolted together, are recommended for highly hazardous operations. Autoclaves, dunk baths, refrigerators, incubators, deep freezes, balances or sinks can be attached to these cabinets. Each cabinet or system is provided with a spun glass filter [17] and an exhaust blower which isolates the operation and reduces the importance of decontamination of the general combined unit exhaust. Cabinets may be used with an open panel with the blower creating an inward air flow of approximately 50 linear feet per minute or closed with all work done through attached arm-length rubber gloves † during which the blower is expected to maintain a negative pressure of one-half to one inch of

* S. Blickman, Inc., Weehawken, N. J., and Kewaunee Manufacturing Company, Adrian, Mich.

† B. F. Goodrich Company, Riverside, N. J.; Minor Rubber Company, Bloomfield, N. J.; and Charleston Rubber Company, Charleston, S. C.

water within the cabinet. Cabinets may also be supplied with vacuum, air, gas, electricity, water, drains, UV, and fluorescent lighting.

Respiratory challenge of animals with infectious organisms may be accomplished by generating an aerosol in equipment such as the Henderson apparatus [18] which is mounted in a safety cabinet. After exposure to the aerosol animals are transferred to the animal holding room through an air lock which extends through the laboratory wall into the animal room. There they are placed in ventilated animal cages [8] or on UV cage racks.[19] Respiratory protection should be available for the operator of the Henderson apparatus.

The safety cabinet is the most important single piece of equipment in preventing laboratory infections. Of course, it cannot substitute for good training and good laboratory housekeeping.

Centrifuge Equipment

Aerosols created by centrifuging due to breakage of glass tubes or the loss of the tube stoppers constitute a hazard to operating personnel.[20] It is recommended that safety cups and heads * be used. Tubes of various sizes are placed in adapters which fit into safety trunnion cups or angle head safety cups and biologically tight covers put in place. After centrifuging the capped cups are returned to the safety cabinet for opening. The centrifuge and the cabinet are best located in the same room. Table-top centrifuges for which no safety cups are available should be placed in the safety cabinet during operation.

Pipetting Devices

One of the most common causes of laboratory infection is the direct aspiration of pathogenic materials into the mouth while pipetting. Oral pipetting of pathogenic cultures should not be allowed and suitable pipetting devices should be supplied. A variety of devices are available.* [21] Some of these operate from the laboratory vacuum line. Recommended methods for the use and handling of pipettes should be followed.[22]

Autoclaves

The use of a double-door autoclave between the laboratory or animal room and the "clean" preparation area is recommended. This allows a positive system to be established for the flow of contaminated discard materials. Autoclaves should be equipped with pressure-activated door-locking devices.

Carboxiclaves

When a delicate instrument such as a pH meter or analytical balance becomes contaminated with infectious materials adequate decontamination is usually impossible unless a sterilizing gas, such as ethylene oxide,[23] is used. Therefore it is suggested that at least one autoclave in each unit be equipped to be used with carboxide gas.† a mixture of ethylene oxide and carbon dioxide gases. This requires that the laboratory vacuum supply be connected to the autoclave as well as a suitable connection for tanks of carboxide. To operate the "clave" a vacuum of about 14 inches (Hg) is drawn on the chamber and carboxide gas injected to a positive pressure of 20 psig. Exposure time is usually 12 hours or overnight. Because of its toxic and flammable characteristics, pure ethylene oxide should not be used as a gaseous disinfectant.

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* International Equipment Company, Boston, Mass.

* Propipettes, Schaar and Company, Chicago, Ill.

† Carbide and Carbon Chemicals Corporation, New York, N. Y.

Ultraviolet Paper Sterilizer

An UV pass-through chamber for disinfecting single sheets of paper may be installed in a wall separating the "clean" from the "contaminated" area.[24] This apparatus rolls sheets of paper slowly between UV lamps which provide a radiation dose sufficient to provide inactivation of all Serratia indica and coliphage and 99.97 per cent of bacterial spores.

Animal Room Equipment

The frequent association of laboratory infections with animal handling warants special attention to the procedures and equipment used for holding experimentally infected animals. There is a surprising variation in the extent to which various bacteria, viruses, and rickettsia will cause cross-infection of animals, thereby imperiling the validity of the experiment as well as providing evidence of potential hazard to the animal handler. The need for special cages and cage racks will depend upon the organism under study. This matter is now under systematic study in our laboratory and some results have been reported.[25] There is a great deal of practical knowledge on this subject among experienced investigators, but very little of it seems to have been published, except by casual mention in the course of reporting other results.[26-28] The following equipment is recommended where applicable.

Ultraviolet Cage Racks—If the use of experimental animals does not include the challenge of animals by the intranasal or respiratory route, animals may be placed in solid-sided metal cages with screen wire tops and the cages kept on cage racks equipped with UV lamps. Lamps used with reflectors are placed to provide a radiation barrier across the top of each cage thereby preventing the outward escape of most air-borne organisms.[19]

Ventilated Animal Cages—Animals challenged with infectious organisms by the respiratory route should be held in ventilated cages until they no longer shed significant numbers of organisms from their fur or in their excretions. In organisms studied thus far this time is about three to six days, but it will need to be determined for each organism. Several types of ventilated cages have been described.[8, 29, 30]

Respiratory Protection—Particularly in the absence of ventilated cages, and sometimes even in their presence, it is advisable for animal workers in infectious holding rooms to use respiratory protection. We have found the use of a ventilated personnel hood * to be satisfactory because it provides good respiratory protection and skin and eye protection from UV (2537A) radiation. Hospital gauze masks have limited value because their filtration efficiency is low for particles less than 5.0 microns in diameter.[31] Some types of commercial respirators offer adequate protection, but in this instance, if UV cage racks are used, safety goggles or shields must be worn to prevent UV eye burns. Standard military gas masks are also effective.

Formaldehyde Vaporizers

Decontamination of enclosed areas, such as rooms and ventilated cabinets and air filter media, may be accomplished by vaporizing 37 per cent formalin solutions with flowing steam. A commercial vaporizer † may be utilized or a suitable device connected to the autoclave steam supply. Less efficient, but still useful, is the evaporation of formaldehyde in a dish on an electric hot plate. For decontamination of enclosed areas when there is no ventilating

* Snyder Manufacturing Company, New Philadelphia, Ohio.

† Hydromist Vaporizer, Tempo Industries, Inc., Glendale, Calif.

equipment in operation, 1 ml of 37 per cent formaldehyde solution should be vaporized for each cubic foot of air space and allowed to act for 24 hours. The initial relative humidity should be at least 80 per cent and the temperature at least 70° F. Filter media may be decontaminated in place with air moving through it by vaporizing 1 ml of 37 per cent solution per cubic foot of air per minute for 30 minutes.

When the building air balance is maintained and when the supply system utilizes 100 per cent make-up air, little trouble should be experienced with seepage of formaldehyde fumes to other areas. In recirculating air systems, and in construction which obviously is not airtight, it may be necessary to seal off areas to be decontaminated by closing air supply and exhaust ducts and using masking tape to close other cracks and crevices.

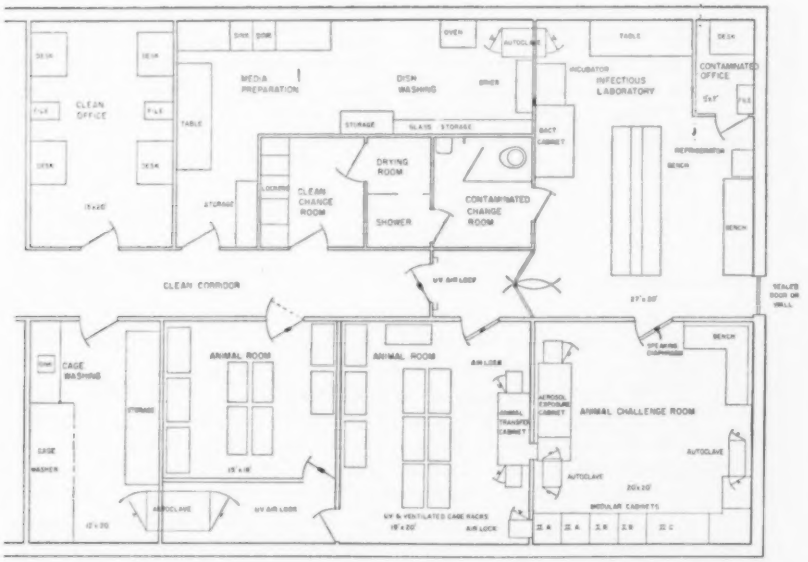
Typical Designs for a Small Infectious Disease Unit

Typical layout designs, which illustrate the principles discussed, are shown in Plans I, II, and III. It is intended that these designs be flexible to allow convenient modification.

Plan I includes a laboratory for the challenge of animals by exposure to infectious aerosols. Plan II utilizes rooms on both sides of a central corridor when the area is not at the end of a wing and when the corridor must be used for access to other parts of the building. When it is desired to confine the infectious disease unit to one side of a corridor Plan III is suggested.

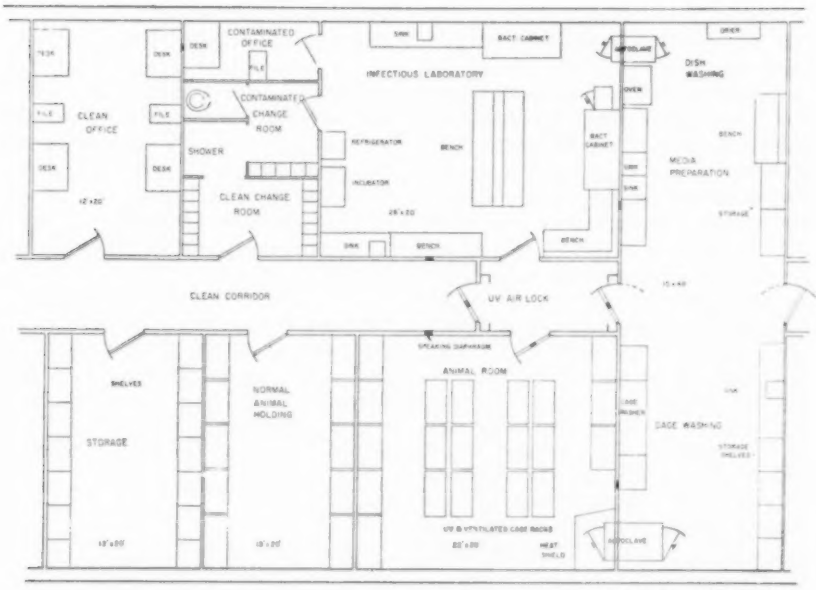
Summary

Some fundamental design requirements and typical layout sketches have



(U. S. Army Photograph)

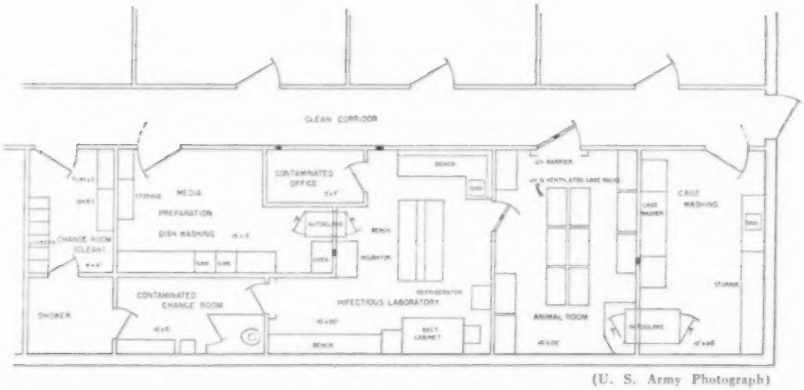
Plan I—Infectious Disease Laboratory Layout



(U. S. Army Photograph)

Plan II—Infectious Disease Laboratory Layout

been presented to assist those interested in building new infectious disease laboratories or in the conversion of existing facilities. Typical safety equipment necessary in these laboratories is described. The basic concepts presented and the equipment recommended have been proved in actual practice and found to be of value in preventing laboratory infections.



(U. S. Army Photograph)

Plan III—Infectious Disease Laboratory Layout

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Inter-Agency Defense Health Board

An Inter-Agency Health Advisory Board has been set up by the Office on Defense Mobilization. This board, under the chairmanship of Howard A. Rusk, M.D., who is also the head of ODM's Health Resources Advisory Committee, will advise the director on health problems in defense mobilization that involve various federal departments and agencies. On the board are represented the Department of Defense, Department of Health, Education and Welfare, Federal Civil Defense Agency, Veterans Administration, and the military services.

Community Participation in a Program for Environmental Health

PAUL W. PURDOM, M.S.E., F.A.P.H.A.; MORRIS A. SHIFFMAN, D.V.M., M.P.H., F.A.P.H.A.; and L. J. ZIMET

In useful detail is recounted here the involvement of properly concerned citizens in the production of a city code. Some of the more lasting benefits of this collaboration are enumerated. This is a matter about which much is said but in which we have seen too little recorded experience.

One of the desirable developments in governmental administration in recent times has been the involvement and participation of citizens in the planning and implementation of an official agency program.[1] Departments of public health have utilized and reported this new approach with some enthusiasm.[2] Some public health administrators have received news of this technic with reservations, however. Their attitude may be illustrated by some of the comments we have received in discussing citizen participation with them. They range from fears that the control of the program would be surrendered to a citizen group to questions concerning the extent of political influences on the department's activities. They include comments on the possibilities of interference, the role of vested interests in the citizen group, and questions about what happens when departmental personnel do not agree with the decisions of the advisory group. A cogent question frequently asked is, "What are the advantages of this technic?" They assume that a qualified public health administrator with his well trained technical staff would be in a far better position to plan within the department, rather than call for the participation of a lay group in the planning process. The following is an account of our experiences in the involvement of a citizen advisory group in planning the environmental sanitation program for the Philadelphia Department of Public Health.

Background—Before describing the specific steps, it may be helpful to outline the events that preceded the formation of the citizen advisory group and in a sense prepared the climate in which such a group could flourish. First, was the 1949 survey of Philadelphia's public health needs and resources made by the American Public Health Association. Shortly thereafter local citizen support for an improved municipal administrative structure resulted in the adoption by the electorate of the Philadelphia Home Rule Charter, a document that prepared the way for a comprehensive reorganization of the local Department of Public Health.[3]

In 1952 a new commissioner of health, trained in public health and experienced in governmental administration, was appointed; and the following year witnessed the appointment, through open competitive Civil Service examination, of a trained and experienced public health engineer assigned to direct the sanitation functions of the department. The steps taken to consolidate the sanitation programs in one division, and to introduce needed staff

and administrative adjustments, have been described in detail elsewhere.[4–6]

Preparing for Community Participation—The new Home Rule Charter of the city directed the Board of Health, an eight-man advisory body to the department, to prepare a comprehensive health code for submission to the City Council. This was required, it was believed, because the legislative base for public health law in Philadelphia rested on a variety of miscellaneous ordinances dating back to the early years of the century and beyond. The code was first submitted to the City Council in January, 1953, no community review having yet been possible. By agreement with the council, however, the code was referred to that body's Public Health Committee where it was held pending review by citizen's groups. Copies were sent to more than 100 organizations and individuals. Comments were solicited from state and federal agencies, from the American Public Health Association and other health agencies, and from municipal health departments elsewhere in the nation.

These comments were carefully reviewed by the department and by community representatives and a new document embracing hundreds of alterations was developed. Many specific changes were discussed at conferences attended by personnel of the Department of Public Health and representatives of trade and industrial organizations. More than 50 such meetings were held.

Some of the alterations, which relate especially to environmental health, were suggested by industrial concerns having a keen interest in the code's provisions. For example, railroad companies were concerned about the possibility of inspections of dining cars or freight cars that might be only temporarily halted in transit through the city; representatives of automatic food merchandising companies, conscious of the detrimental effect to their business of a single food-poisoning outbreak associated with their equipment, were anxious for the adoption of adequate controls; concerns engaged in pest control operations resisted licensing, but were willing to recognize the need for restrictions on the use of dangerous poisons.

One trade organization representing a specialized food processing operation, however, took exception to their operations coming within the purview of the Health Code, since they were already under supervision of a state agency. Departmental surveys, nevertheless, showed a generally poor level of sanitation in this operation and data on food-poisoning outbreaks warranted major concern. Thus, no exception was recommended, a view shared by some of the more progressive companies involved, as well as the community generally. These meetings developed a sounder, more practical code; they were also a mechanism for achieving a common understanding between the Health Department, people representing business and industrial concerns, and the consumer public. Ultimately, there was nearly unanimous agreement on the technical provisions.

The revised document was approved by the Board of Health in January, 1954, after which the code was forwarded to the Public Health Committee of the City Council for immediate consideration. Public hearings before the council were held and representatives of many community organizations appeared as proponents. There were some

Mr. Purdom is director, Division of Air Pollution Control and Environmental Sanitation, and Dr. Shiffman is chief, Milk and Food Sanitation Section, Division of Air Pollution Control and Environmental Sanitation, Department of Public Health, Philadelphia, Pa. Mr. Zimet is secretary to the Board of Health, Philadelphia.

This paper was presented before the Conference of Municipal Public Health Engineers at the Eighty-Third Annual Meeting of the American Public Health Association in Kansas City, Mo., November 16, 1955.

dissenting voices and several questions were resolved during the public hearings before final passage.

The Philadelphia Health Code, after many months of preparation, community review, and public hearings, was adopted by a unanimous bipartisan vote on September 17, 1954, when the City Council convened in its first session in Independence Hall to celebrate the 167th anniversary of the signing of the Constitution.

Later participation by the citizenry in the preparation of regulations required to implement the basic enabling document of the Health Code was undoubtedly facilitated by the process used to develop the code itself.

Developing Regulations—The Health Code is essentially an enabling ordinance which defines terms, sets forth the duties and powers of the Department of Public Health, establishes departmental interrelationships, and establishes the administrative provisions. The code specifically sets forth the subject matter for the regulations, which then become legal guideposts to amplify and implement the Health Code.

In order to develop regulations to implement the new code a 15-member Advisory Committee on Environmental Sanitation was created, appointments to the committee being made by the commissioner of health. In some instances trade organizations were asked to submit the names of persons active in the industry; in others, civic leaders who had expressed an interest in sanitation were invited to become members. An attempt was made to secure diversified talents and to maintain a balance between the various personal interests of the committee members who were asked to serve for a period of one year and who were eligible for reappointment.

The Advisory Committee included the vice-president of a local university, an official of the Philadelphia Health and Welfare Council, a food service operator, a milk plant operator, the managing director of the Philadelphia Housing Association, an officer of an AFL local union, the research associate of the Bureau of Municipal Research and the Pennsylvania Economy League, an industrial health physician, an executive of a food distributors' association, an officer of the Philadelphia Industrial Union Council of the CIO, a bakery operator, druggist, veterinarian, tavern owner, and a hospital administrator.

The first meeting of the Advisory Committee was held in September, 1954, when the group elected its own chairman and vice-chairman. The director of sanitation services for the Health Department agreed to serve as secretary. It was agreed that the chairman could appoint subcommittees which would be composed of persons not on the full committee. Members were advised that they served as individuals and that their viewpoints would be considered not as representing those of any organization, company, or association. It was explained that they had been selected for their competence in a particular field of environmental sanitation and that the department would welcome recommendations from this group and give them serious consideration, but, on the other hand, that the department would be free to exercise its own responsibilities to act as necessary to protect the public health—even if in disagreement with the Advisory Committee.

The department felt that the first regulations to be prepared under the new Health Code should concern eating, drinking, and catering places. This was also the opinion of the advisory committee. After several months, a preliminary draft was prepared by personnel in the Milk and Food Section of the division, and the lengthy, but necessary, process of review began. The first reading was by the directors of the various divisions of the Department of Public Health, and this review did not

result in extensive changes. The regulations were next reviewed with the section chiefs and their assistants in the Division of Air Pollution Control and Environmental Sanitation. This second review became an invigorating challenge to the authors of the preliminary draft. At that time the regulations were carefully studied by a group with wide experience, each member being especially versed in one or more of the major aspects of environmental health programs. After four sessions lasting into the night extensive revisions were made. At this point the advisory group appointed a subcommittee comprised of their own membership and other interested persons in the community to review the regulations.

The members of the review committee consisted of persons who were actively engaged in the operation of eating, drinking, and catering establishments; they represented all types of operations, from the institutional and school food services, through taverns, restaurants, drug stores, luncheonettes, caterers, and cafeterias. In addition, the labor representatives of the food-handler unions and a professor of bacteriology were present. This group was intimately involved in the problems under discussion, its members having had personal knowledge of the operations of the Department of Public Health as a result of inspections of their own establishments. Some of the reactions and opinions of the subcommittee could be clearly traced to their experiences, pleasant or sometimes not so pleasant, with Health Department representatives. Confidence in the program as a whole, however, permeated all of the meetings and discussions. This, we believe, was engendered by the opportunity for participation by industrial groups and by their knowledge that any organization or individual operator could call and obtain prompt reinspection and review by the supervisory staff when he felt that a field decision of the sanitarian was not merited.

On the other hand, there were some personal experiences that also remained with members of the subcommittee. In one instance a subcommittee member was instructed to correct a submerged inlet. Through the vagaries of administrative chance it developed that he had to go through zoning and other preliminaries before the correction was finally made. He was one of our most studious reviewers in any phase of the regulations concerning plumbing. In another instance an operator had a discussion with the sanitarian at his establishment concerning the extent of the cracks in the floors. It was he who suggested that the section on floors be modified to read, "free of open holes or cracks" for greater clarity.

In discussions with representatives of industry, Health Department employees refrained from taking the attitude that the department was for the regulations and industry opposed to the regulations. The attitude throughout was that both groups were interested in the development of effective, equitable, and practical regulations. In the course of the review the industrial group did not downgrade any important sanitation item and in some instances rewrote items for greater effect and stringency. For example, our recommendations for equipment for dishwashing and ventilation were upgraded. This is not to say that there was full agreement on all items; there was disagreement on some of the items themselves; and there were lengthy discussions about language, wording, and clarity. Sections were written and rewritten, so that all would be assured that there was no ambiguity in the provisions of the code and that it would be interpreted in the manner intended. This, of course, was a very difficult task and to a degree it was solved by the commitment of the Department of Public Health to issue a manual

of interpretations and practices based on decisions made after the regulations were issued, and to make such a manual freely available to industry.

Preliminary drafts of the regulations were sent to interested persons and organizations in Philadelphia for comment. National organizations concerned with environmental sanitation, such as the Public Health Service and the National Sanitation Foundation, along with universities and health departments, were also asked for comments. All such comments were presented to the subcommittees for their review.

While Department of Public Health specialists in food sanitation were present at all meetings of the subcommittee, they assumed the role at most meetings as consultants and advisers. In one discussion, concerning a requirement for thermometers on dishwashing machines, an experienced operator told a dissenting member that it was impossible to supervise this operation properly without the indicated thermometers. On another occasion a modification was proposed to permit a method of soup service which would save labor at a real risk of exposing the soup to contamination by cigarette ashes, cough droplets, etc. The labor representative warned that if sanitation standards were to be sacrificed to other considerations, then his objective aim of providing adequate sanitation would also be altered to other considerations besides sanitation. The proposal was immediately discarded.

Problems arose which so involved special operations that task forces composed of the individuals affected were created. Typical operators of cafeteria and buffet service were called together to review requirements for protecting food against contamination by sneezing. Similarly, meetings were held with tavern owners to clarify the proposed language referring to a matter of concern to small operators, a number of whom live on the premises of the food service establishment. It was agreed that the regulations were intended to provide that the food preparation area was properly separated from living and sleeping quarters. A satisfactory wording to serve this purpose resulted from the discussions.

In a number of instances, the subcommittee suggested incorporation of items not previously included in the proposed regulations or upgrading of proposed requirements. They were particularly concerned about toxic chemical residues. It was also requested that the department provide review service for new construction and major alteration. Detail specifications, such as the depth of sinks, were recommended. On the whole, members of the subcommittee appeared to be as interested as Health Department representatives in protecting the public against food-borne infection. They also expressed their desire that these new regulations be applied uniformly to all establishments.

General agreement was finally obtained by the participating parties. Regulations recommended by both the Department of Public Health and the Advisory Committee were then submitted to a subcommittee of the Board of Health for review, which after the adoption of several suggested minor changes, approved the document. At a later meeting on May 26, 1955, the Board of Health adopted the regulations. The Philadelphia charter requires a Law Department review and publication, plus a 30-day filing for public hearings before regulations can become effective. It is noteworthy that no person or organization requested a public hearing on these regulations.

After final adoption 20,000 copies of the regulations were printed for distribution to each establishment. A meeting of divisional personnel and industrial groups was arranged when the division was ready to begin implementation of the regulations in the field. At

this meeting the significant points of the new regulations were discussed, together with the manner of procedure and enforcement.

Summary

We have presented a case history of the involvement of a citizen's advisory group in the activities of a health department. The immediate participation has been in the development of regulations governing the sanitation of eating and drinking and catering places. This Advisory Committee on Environmental Sanitation, however, is a continuing adjunct to the Division of Air Pollution Control and Environmental Sanitation of the Philadelphia Department of Public Health. It plays an important role in program development by participation in the evaluation and planning of programs and in the solving of problems in environmental sanitation.

On the basis of these experiences we can attempt to answer some of the questions that have been raised by those who are not yet convinced of the validity of this administrative device. There were no problems of interference with department activities, or of political pressures. The group acted as representatives of the public and there was no partiality for any special interest group. The most inclusive and important question to be answered is whether involvement of interested lay groups in program planning and implementation is effective and, if so, what are the advantages? In this case, the advisory group served as a middle ground for two-way communications between the division and the representatives of the food industries. In many instances the industry groups affected by regulations feel that they are merely on the receiving end of a remote, impersonal power called the health department. When these regulations were completed, the industry representatives were largely aware of their content and were satisfied that they had participated in their formulation. There was not one dissenting voice when the regulation was presented for public hearing and these hearings were well publicized. We feel that this confidence was engendered by their knowledge that they had had entrance into the deliberations and decisions of the department through a permanently constituted group making up the citizen's Advisory Committee and did not need to present their case as individual petitioners.

Koos in a recent study [8] showed that the residents of an urban community had no appreciation of the value, effectiveness, or functions of a health department. We are competing at a sort of public market place for the health department's share of the tax dollar. We can no longer be complacent in thinking that the public understands or appreciates the scope and benefits of our product. The citizen's advisory group participation and involvement is one device through which we can reach out into the community and effectively tell our story. It is an especially effective device because it brings the community right into the workings of the health department and makes them a part of that work.

In addition to involving the community at large, we must also bring in those groups whose activities we regulate. In the cases where persons had knowledge of the functions of a health department, in the above study [8] this knowledge was limited to the police functions and activities. If we are to give more than lip service to our frequent statements on the role of "education" in environmental sanitation, we must do more to make communications with these groups a two-way path. One way to do this is through citizen interest and participation in program. The question may not be whether to have such citizen advisory groups or not to

have them. Rather, the question may be can we afford to operate without them?

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Dr. Leroy E. Burney Appointed New Surgeon General

By recess appointment of President Eisenhower, Leroy E. Burney, M.D., M.P.H., has succeeded Leonard A. Scheele, M.D., as Surgeon General of the U. S. Public Health Service. Dr. Burney, a graduate of the University of Indiana Medical School, also has an M.P.H. degree from the Johns Hopkins School of Hygiene and Public Health and is a Diplomate of the American Board of Preventive Medicine.

Dr. Burney has been with the Service for 25 years, most recently as deputy director of the Bureau of State Services with the rank of Assistant Surgeon General. Previously he had been loaned to Indiana as state health commissioner for eight years.

Dr. Burney is a Fellow of the American Public Health Association and last year completed two, three-year terms as chairman of its Committee on Professional Education. He served as a member of the Governing Council from 1950 through 1952.

Statistics of Medical and Hospital Care Programs

Their Use for the Coordination of Health Services

MURRAY S. ACKER, M.D., D.P.H., and LLOYD G. WILLIAMS

Is there an object lesson here meaningful for agency executives in those communities in which each organization jealously guards (and buries in its files) whatever socially useful information it may gather in the course of its service activities?

Whenever the organization of health services goes through a period of relatively rapid change, it is inevitable that the different sectors of the health front will progress at uneven rates of development. Saskatchewan during the last ten years has experienced such a period of rapid change in areas of hospital and medical care insurance. The purpose of this paper is to describe how the data arising from the operations of these programs are being used in a public health department by those responsible for policy, administration, and research to coordinate and unify these services.

Saskatchewan Programs

The people of Saskatchewan have a 50-year tradition of organized self-help. Much of this cooperative effort and pooling of resources has found expression in medical and hospital care organization. The significant feature has been public control, either on a municipal or provincial level. Another underlying characteristic, which stems from the tradition of compulsory taxation support, has been virtually universal coverage of the population in areas served.

All programs give rise to statistics, but in Saskatchewan the data that have had widest application as tools of assessment and measurement have arisen from the operations of three specific types of programs.

The first type relates to public assistance. In 1945 the health department greatly expanded its health services for the indigent and near-indigent by introducing services which insured a virtually complete range of health care benefits for these groups in the province-wide population.[1, 2]

The second type of program has to do with geographic coverage. Between 1946 and 1952 several public health regions were organized for the provision of full-time services financed from local taxation and provincial grants. One of these health regions, Swift Current, launched a region-wide prepaid medical care program to cover every resident for a wide range of benefits and on a tax-supported basis. The program is under public control through an elected regional health council and an elected executive board.[3-5]

The hospital care insurance plan introduced in 1947 is a program of the third type. It pertains to a discrete element of service—comprehensive in-

Dr. Acker, director, Research and Statistics Branch, and Mr. Williams, research economist, are associated with the Saskatchewan Department of Public Health, Regina, Saskatchewan, Canada.

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patient care—and covers virtually the entire population.

Each of these programs is devised so that a continuous or periodic registration of the beneficiaries is established. This provides a measure of the covered population—an essential cornerstone for statistical analyses. All morbidity and utilization data of these programs can, therefore, be related accurately, quickly, and completely to the "denominator" data specific for age and sex, family size, and residence.

Coordinative Role of Health Services Data

Public health and medical or hospital care agencies continually experience the situation where records are designed, data are religiously collected and there is some difficulty in deciding just how all of this interesting information can be analyzed and put to use. Often these data could be of practical value to another body operating in a different sphere of health activity. For example, data assembled by the hospital insurance division is continuously accessible to the division responsible for hospital construction planning and maintenance of optimum operating standards within individual hospital units.

Similarly, hospital care data are immediately available for the branch which is responsible for specific public health programs. Data available from the Swift Current regional medical care program are at the elbow of the medical health officer in that region as he designs and implements various preventive services.

To an increasing extent, the professional staff at the College of Medicine, of the University Hospital, and certain of the voluntary health agencies have made concrete use of hospital care data specially analyzed at their request. In all of these instances the availability of quantified reliable data permits the replacement of empirical judgment with scientific judgment based upon objective measurement.

Health Services Data and Public Health Projects

It is perhaps in the area of coordinating public health and medical or hospital care services where results can be observed which point to the greatest potentialities. An important example of this came about with the initiation of a rheumatic fever prophylaxis program on a regional basis. Prompted by the recommendations of the American Heart Association, the feasibility of initiating prophylactic programs initially in organized health regions and subsequently throughout the entire province was investigated. An analysis of hospital care data revealed that in a typical year (1952) 852 discharges for rheumatic fever and 383 discharges for chronic rheumatic heart disease occurred in the province. Together these cases accounted for 25,585 patient days of care. The cost of hospital care alone for this group came to almost $210,000. The addition of medical care costs added a further estimated amount of $52,000.

With these data alone it was possible to demonstrate to the government that a successful preventive program utilizing daily oral penicillin at an average annual cost of less than $40 per capita, if it did nothing else, would realize in time substantial savings in hospital care costs within a public program. Consequently in 1954 it was decided to proceed with the organization of the first regional program for rheumatic fever prophylaxis.[6]

One of the important first steps in establishing the prophylaxis program was to solve, without undue delay, the problem of case finding. From the records of the hospital services plan

lists of all hospitalized patients with rheumatic fever and chorea over a five-year period were tabulated giving the age, residence, name of attending physician, name of hospital, and other relevant data. These lists included a total of 106 persons representing an average annual rate of 47 per 100,000. Thus the health officer and his advisory rheumatic fever committee had immediate access to the majority of potential candidates for prophylaxis. Subsequently this committee was able to screen each case according to the precise schedule of diagnostic criteria in order to discover those persons to be placed on continuous chemoprophylaxis.

The organization of the province-wide program of immunization with Salk vaccine, which was launched in May, 1955, also demonstrated the value of the hospital care insurance records in deciding over-all policy and in actual program planning. The central problem that the health department faced was to organize public clinics quickly and efficiently for the allocation of a strictly limited stock of vaccine to be used on the priority group of five- and six-year-old children. The key to the solution of this problem lay in the availability of a virtually complete family census, contained within the records of the population currently covered by the hospital plan, to delineate accurately the bounds of a clinic area and the attendance of five- and six-year-old children. It was also possible to prepare the names and addresses of the parents of the children eligible for vaccination so that a suitable explanatory folder could be mailed promptly. The public vaccination clinics subsequently operated without any major difficulty and achieved almost an 80 per cent response.

In other activities dealing with infectious disease control it is possible to observe how public health administration is facilitated by access to the records of a medical care or hospital care program with universal coverage. Epidemiologists and health administrators have always been conscious of the gaps in compulsory reporting of notifiable diseases.

In the Swift Current health region, the health officer faced an upswing in the incidence of infectious hepatitis and embarked upon the widespread use of gamma globulin for the prevention of secondary family cases. Conscious of the delays and incompleteness in the official notification procedure, he was able to gain early knowledge of primary cases from the daily medical account forms of the practicing physicians. In this way preventive inoculations of secondary family contacts could be given by public health nurses or family physicians in a comprehensive and organized way. Similarly during two recent years when poliomyelitis was epidemic and western equine encephalomyelitis was concurrently endemic, records of hospital admissions for these two diseases were a valuable supplement for an epidemiologic analysis which otherwise would have had to rely solely on incomplete notifications.

These few examples of some of the technics whereby data from prepayment programs have been used for specific public health projects demonstrate that coordination is possible if the opportunities are seen and grasped. It is in the field of hospital planning, however, that a comparatively greater degree of coordination has been achieved. Under the impact of universal hospital care insurance, the administration of payment for care and the attainment of more hospital services and facilities, in a quantitative and qualitative sense, have been woven into a more unified fabric.

Hospital Care Data as an Instrument of Hospital Planning

The launching of the hospital services plan in 1947 meant setting up the ma-

chinery for registering the entire population, determining eligibility, collecting tax premiums, and paying hospitals. But as with any new venture into universal prepaid service, the solution of one problem—the financial barrier to needed care—immediately threw others into sharper focus.

Because the plan covered everyone, beneficiaries became highly conscious of their right to a hospital bed when they needed it. The resultant pressure on accommodation greatly stimulated the pace of hospital construction and raised pressing problems of where new hospitals should be located, which hospitals should be extended, and how many beds were required in each. Statistics assembled primarily for the administration of a prepayment organization proved to be reliable guideposts for the determination of basic policies in the hospital construction program, for maintaining and elevating standards of hospital care, and for studying a host of factors which might bear a causal relationship to the pattern of hospital utilization which was emerging.[7]

One of the earliest uses of the data was in the field of hospital construction planning. Empirical appraisals of size, location, and function were by 1950 largely superseded by careful studies based upon hospital discharge experience. The Survey of Hospitals,[8] conducted in that year as part of a provincial survey of total health resources, employed these data to give concrete expression to the concept of an integrated regional system of hospitals. For the province as a whole this integrated system was designed to provide 7.5 general hospital beds per 1,000 population.

In 1955 an extensive reappraisal of the needs for general hospital beds was undertaken, prompted by increasing evidence of many contradictions when the specific requirements of individual hospitals were computed according to the system outlined previously. A new bed-need formula based upon a precise quantitative analysis of utilization experience has been worked out which, in practice, has proved itself to be an objective instrument for measuring local bed requirements. A detailed description of the theoretical basis and practical application of this new formula will be published shortly.[9]

The formula is based upon the level of hospital care during the five-year period, 1950 to 1954, that had reached a plateau of about 200 cases and 2,150 days per 1,000.[10] Accepting the desirable standard of an average occupancy of 80 per cent, it follows that 7.4 or 7.5 beds per 1,000 are required to achieve this volume of care. The bed-need formula as it applies to each hospital in the province is based upon a detailed study of the proportional pattern of patient flow from communities peripheral to that particular hospital. Thus, a theoretical total apportioned population from anywhere in the province served by any individual hospital can be readily computed. The application of this formula of bed-need is twofold: it provides the basis for estimating the recommended occupancy of each hospital when determining rates of payment by the hospital plan; and it enables the health department to formulate more rational decisions when new hospitals or extensions to existing hospitals are requested.

Approaches to Problems in Improving the Quality of Hospital Care

Hospitals are living institutions. Setting down a schedule of optimum standards is not too difficult: there is no mathematical formula, however, to insure that these standards will be met and maintained. Statutory regulations set forth standards which must be met as conditions of payment by the hospital services plan. A uniform accounting

manual insures proper preparation of financial statements and budget submissions.

The health department, through its Division of Hospital Administration and Standards, also provides a team of qualified consultants to assist hospitals in reaching a proper standard of "readiness to serve" under a system of universal prepayment. These consultants offer guidance in accounting, administration, nursing, nutrition, x-ray, laboratory, and pharmaceutical services. This division works closely on a day-to-day basis with the prepayment agency and constantly draws upon hospital utilization data which, for example, can be readily related to cost accounting data.

How morbidity and utilization statistics from the plan are best used, however, is revealed by examining their application to the study of specific problems in the quality of care. Within the past year the Health Services Planning Commission, which is a body advisory to the Minister of Public Health, undertook to examine the nature of surgical care provided in small hospitals with less than 25 beds. The question posed was whether major surgical procedures should be performed in small units with necessarily limited facilities or whether these small hospitals should be restricted to more limited functions confined to general medical care, maternity service, and minor and emergency surgery.

Subsequently a study of major surgical operations was prepared for the entire group of under 25-bed hospitals. With data on the incidence of specific major procedures in these institutions related to the presence of surgical assistants, medical or nonmedical anesthetists, type of anesthesia and other relevant factors, the planning commission will be aided in arriving at a suitable policy.

Another special study relates the quality of administrative practice. For the past three years tabulations have been prepared on the number of days of delay between the date of admission and the date of surgical operation for all surgical cases admitted to most of the larger hospitals. When it came to negotiating rates of payment, hospitals with above average delays could be shown the need for a lower level of occupancy and thus a lower rate of payment. Moreover, the situation often improved in specific hospitals merely by pointing out what amounted to poor coordination in the scheduling of admissions in relation to scheduling the operating rooms. Frequently hospitals were quite unaware of the existence of this problem.

Recently consideration was given to the high rate of admission for dental surgery which seemed to remain at a level of 3.1 per 1,000 year after year. A detailed study of these admissions showed wide variation in different areas. The data indicated that inpatient hospitalization was not required for many of the procedures. As a result more precise admission criteria were established and cases were diverted back to care in dental offices.

In many other instances special analyses of the statistical data on hospital care have been used to examine such things as the needs of chronically ill and long-stay patients, or the relationships of length of stay for specific diagnostic groups to occupancy. As each problem arose, the data from the prepayment plan have offered yardsticks for reaching more objective solutions.

"Etiology" of Hospital Care

The foregoing examples show how peripheral problems, not directly related to the mechanics of payment for care, are thrown up in the wake of a universal hospital insurance system. A public health agency with responsibilities in

every sphere of community medicine cannot deal with these problems in any fundamental or lasting way unless an effort is made to seek out their causes. For example, abuse of a comprehensive program by the beneficiaries is considered in many circles to be an inevitable outcome of a service which is freely available. But if the public authority is to avoid the introduction of administrative devices and co-devices which may contradict the underlying health objective of the plan, these apparent abuses must be defined and measured and their causes understood.

Several studies have been published which attempt to isolate the underlying factors producing variations in hospital use.[11, 12] Even a cursory examination of the experience of the Saskatchewan program is sufficient to prompt a number of questions: What were the reasons for the rise in utilization during the first three years of operation? Can the present high plateau in volume of care be expected to decline? What accounts for the striking regional and local differences in utilization? Are urban-rural differences to be explained by variations in morbidity, patterns of medical practice, underlying socioeconomic factors, or a combination of all of them?

A recently published study [13] attempted to throw light on some of these questions by comparing areas in the province with the highest and lowest utilization rates and relating the hospitalization experience in these areas with a number of presumably relevant attributes. From this analysis, it was possible to define a profile of demographic and social characteristics in comparable areas with the highest and lowest rates of utilization. Greater rurality, low population density, larger families, and greater distances from large cities are important social factors in areas of highest use. Land values are less in the "high" areas. Since it is reasonable to associate poorer housing with less productive land, the higher utilization is part of the price paid for the inadequate resources for home care. Previous studies [7, 11] had demonstrated the positive correlation between bed-population ratios and utilization within the framework of universal prepayment. The recent study just cited [13] confirmed the finding of a greater ratio of beds in the "high" areas; moreover, higher utilization was found to be associated with a smaller supply of physicians.

The interaction of the many social and professional forces at work finds expression in the way hospitals are used for the care of various illnesses. Thus, in the more rural "high" areas patients with influenza, pneumonia or bronchitis were admitted four to six times as frequently as similar patients in the contrasting urban "low" areas. City patients with respiratory illness were admitted less frequently but for longer periods of stay. In other words, less seriously ill cases in the larger urban centers were much more likely to be cared for at home.

All these analyses of hospital care data lead one to conclude that there are a number of important social, geographic, and professional conditions which play a role in what might be called the "etiology" of hospital care. Moreover, high utilization is better understood as the combined product of these conditions rather than the result of personal whim on the part of the patient or his doctor.

Statistical Data and Problems in Medical Care

A combination of medical care programs directed toward single disease categories, special population groups, or the provision of specific services for all, is bound to produce anomalies in administration. A health department must be alert to these problems. In seeking their solution it must retain a

clear view of the basic health objective of each service. Moreover, it is important to avoid a decision that may ultimately hinder the operation of a comprehensive program of the future.

Data collected routinely, or by way of special analyses, from the hospital and medical care programs are valuable instruments in this process of evaluating or extending programs. Not infrequently the analysis of data from one program is of considerable value for another. In the provincial cancer service, for example, it had been estimated in recent years that close to 85 per cent of all new cases of cancer for most sites are eventually admitted to one of the two special cancer clinics for diagnosis and therapy. To verify this estimate and to search for reasons behind the nonadmission of the group that failed to reach the provincially operated clinics, data from the hospital services plan were analyzed.

All cases in one year with a discharge diagnosis of cancer were tabulated and the necessary information on age, sex, residence, hospital, and admitting physician was listed. These data were matched with cancer clinic records and this process verified the reliability of the 85 per cent estimate. Subsequently, the residual cases were followed back to the hospital or attending physician and, after eliminating wrong diagnoses, it was possible to examine some of the reasons for nonadmission.

Special analyses of the volume of eye operations by age group have been of concrete value in revitalizing a health department program to deal more effectively with blind cases amenable to surgical and other correction. A detailed tabulation of the incidence of amputations by site proved useful in reconsidering policy on the need for a coordinated prosthetic workshop. Another special study revealed important geographic differences in the volume of vitamins prescribed for aged public assistance beneficiaries. Intensive analyses by regional areas and prescribing physician are now providing greater insight into causative factors. Meaningful hospital care data in quantified form similarly made possible an estimate of likely caseloads should specialized treatment centers be set up for the care of persons with acute or chronic alcoholism. Hospital utilization data were effectively employed in two health regions to examine whether the existence of a comprehensive prepaid medical care program in one region had any effect in influencing the volume of hospital care.

The use of hospital care data to assist in program operations is not confined to the official health agencies. One voluntary agency, for example, functioning in the field of arthritis and the rheumatic diseases, draws upon annual tabulations of the hospitalized incidence for these disease categories. The data analyzed on a regional basis have been useful in planning the distribution of mobile diagnostic and physiotherapy clinics. These data also offer a preliminary guide to case finding and are of considerable value in the continuing educational efforts of this agency.

Use of Data for Other Purposes

A current study of the epidemiology of multiple sclerosis involved a field visit to all cases in the province. Tabulations of hospitalized cases over a three-year period were prepared and served as a most valuable method of initial case finding. A newly arrived cardiac surgeon interested in the incidence of valvular heart disease and congenital cardiac disease was provided with a comprehensive analysis including a count of cases (not identifiable as to actual persons) who had undergone surgical correction outside the province in earlier years. In this way he was able to estimate the potential caseload of the cardiac cases who might in the

future be served by his surgical service.

An interesting study, launched recently, is an attempt to discover the postnatal outcome of patients with toxemia of pregnancy. The hospital care data on all mothers hospitalized with a diagnosis of toxemia are being matched with birth, stillbirth, and infant death data obtainable from the vital statistics records of the health department. Data from the public cancer program are currently under intensive study. For the period since 1945 when the program was extended to include payment for comprehensive diagnostic and therapeutic services, data on incidence and survivorship will have the important advantage of being referable to virtually the entire provincial population.

Coordination of data related to vital events, to physician supply, to hospital and health center facilities, and to hospital utilization and other sources of morbidity experience promises to find its most important expression on a regional basis. Coordination is a long and continuing process. Already, regional medical health officers are relating these various health indexes in a meaningful way to discover foci of special need and to plan pertinent programs in meeting these needs.

The advisability of establishing a new benefit to include diagnostic radiological services in hospital outpatient departments or in physicians' clinics and offices has been recently proposed. Data from the Swift Current program and the public assistance program have been particularly useful in estimating the volume and cost of such procedures as G.I. series and gallbladder visualization which the entire population would require—and undoubtedly demand—under province-wide prepayment. From the data of the hospital services plan relating to admission diagnoses and length of stay it was also possible to compute provisional estimates on the extent by which inpatient diagnostic workups would be reduced in the event that a prepaid program for outpatient services should be introduced.

Comment and Conclusion

In this paper we have referred to some of the ways in which the statistical data derived from the operation of hospital and medical care programs have been used as tools for coordinating efforts in the different planes of health service. Because the existing programs are universal in coverage and because they are all publicly organized and directly or indirectly supervised by the provincial health department, it becomes possible to achieve a large measure of coordination.

Within our organizational framework any parallel agency, inside or outside the health department, has ready access to the statistical data of the operating prepayment programs. These data are timely and reasonably accurate. Moreover, they are referable to the total population on a province-wide basis, within discrete geographic regions, or within specific socioeconomic groups. Therefore, indexes of need, of service experience, and of costs of care can be computed in terms of rates that are valid for comparison. Whether it is a matter of policy determination, program planning, or actual program operations, these data on health services provide the instruments for more objective decisions.

They are of potential value beyond their requirement for the immediate administrative functions of the prepayment agency. Initial steps have been taken to use the data for planning specific public health projects. Decisions requiring the extension of medical care benefits have been guided by precise measures of morbidity. Analyses of hospital care data have been of inestimable value in formulating indexes of

bed-need in specific areas and for stimulating higher standards of care. Advances in public and professional education as well as certain epidemiologic studies have been assisted by being able to draw upon these data.

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End of Chronic Illness Commission

The Commission on Chronic Illness closed its doors at the end of June, 1956, with its chairman, Leonard W. Mayo, urging "other organizations to go forward with extensive programs designed to meet the problems of chronic illness." The commission was organized in 1950 by four national agencies interested in the problem, among them the American Public Health Association.

The commission in defining chronic illness and making recommendations as to long-term care, the chronic patient at home and in the institution, coordination and integration, personnel and education, research, and financing set the stage for public understanding and action. Its monthly Chronic Illness News Letter, now published by the American Medical Association, one of the founding organizations, and the final report of the commission constitute what is currently known about chronic illness and chart what are some of the activities of the immediate future.

Studies of Adenoviruses (APC)* in Volunteers

JOSEPH A. BELL, M.D., Dr.P.H., F.A.P.H.A.; THOMAS G. WARD, M.D., Dr.P.H.; ROBERT J. HUEBNER, M.D., F.A.P.H.A.; WALLACE P. ROWE, M.D.; R. GERALD SUSKIND, M.D.; and RALPH S. PAFFENBARGER, Jr., M.D., Dr.P.H.

An outstanding feature of this research that will be of immediate interest to all in public health is the report on a field trial of APC vaccine which furnishes the background data and the basic essentials for the use of such a vaccine.

In 1947, the U. S. Army Commission on Acute Respiratory Diseases [2] reported experimental transmission to human beings of etiologically undifferentiated acute respiratory illnesses. Volunteers were inoculated by spraying the nasopharynx with 10 ml of bacteria-free filtrates of nasopharyngeal excretions collected from (a) a donor ill with an acute febrile respiratory disease (ARD), and (b) from donors ill with severe ("S-CC") and mild ("CC"), nasopharyngeal catarrh. Inoculation was followed by minor respiratory illnesses chiefly manifest by nasopharyngeal catarrh at from five to six days in the ARD group and from one to two days in the S-CC and CC groups. Reinoculation of both groups with homologous and heterologous materials showed no immunity to illness from the S-CC and CC inoculums and only homologous immunity to illness from the ARD inoculum. It was concluded that at least two agents, presumably viral, were causing acute respiratory diseases of unknown etiology.

In 1953, Rowe, et al.,[3] reported the discovery of adenoid degenerating agents later classified [4, 5] as the adenoidal-pharyngeal-conjunctival (APC) group of viruses and recently designated adenoviruses. This group of viruses is characterized by production of unique cytopathogenic changes in cultures of epithelial cells and by nonpathogenicity for ordinary laboratory animals. They are heat labile, filterable, and resistant to antibiotics and ether, and have soluble, group-specific, complement-fixing antigens which are not type-specific. Twelve human and two simian immunologically distinct serotypes have been delineated to date by type-specific neutralization tests.[6] Types 1 through 6 have been found in human tonsil and adenoid tissue removed surgically from persons without acute febrile illness. Types 1 through 7 have been found on the pharynx or conjunctiva of human beings with acute, febrile, respiratory illness. A single strain of Type 8 has been recovered from the eye of a human being with epidemic keratoconjunctivitis and serologic evidence in 25 cases suggests an etiologic relationship.[7] Only single strains of other known types have been recovered to date.

In 1954, Hilleman, et al.,[8] reported that a newly isolated virus (RI 67) was associated with ARD in military re-

* On May 25, 1956, the investigators responsible for using the names Adenoid Degenerative (AD) viruses, Adenoidal Pharyngeal Conjunctival (APC) viruses, Respiratory Illness (RI) viruses, and Acute Respiratory Disease (ARD) viruses to designate a new group of respiratory viruses agreed to use henceforth the term "adenovirus" in lieu of former names.[1]

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cruits. RI 67 virus was found to be Type 4 of the virus group previously reported by Rowe and Huebner and recently designated adenovirus. In 1955, Ginsberg, et al.,[9] reported that serums from the donor and recipients of ARD inoculums used in Army Commission studies reported in 1947 showed a rise in neutralizing antibody titer against RI 67 virus (APC Type 4) (Adenovirus Type 4).

In August, 1953, the authors began a series of studies in volunteers to determine if, and under what conditions, various types of adenovirus could induce human illness. To date 13 different studies involving 654 volunteers have been carried out. It was found that the intranasal instillation of virus was followed occasionally by minor respiratory illness which could not be attributed to the virus inoculated. On the other hand, the swabbing of virus on the conjunctiva induced readily recognizable illness.[10] Such induced illness was associated with infection as indicated by a rise in complement-fixing antibodies or by virus isolation on the fifth to ninth postinoculation day. Both induced infection and illness were associated with susceptibility as indicated by the absence of preinoculation homologous neutralizing antibodies. It was also found that intramuscular inoculation of an inactivated virus vaccine would induce neutralizing antibodies, and persons with such induced antibodies were protected against challenge-induced infection and illness to the same extent as persons with naturally acquired neutralizing antibodies.[11] This report reviews these studies and details those not previously published.

Methods of Study

Studies were carried out in the Federal Industrial Reformatory, Chillicothe, Ohio, and the Maryland State Reformatory, Breathedsville, Md. Adenovirus Types 1 through 6 were used. The inoculums consisted of (a) human nasal washings known to contain Type 3 or 4 virus; (b) Types 1, 2, 5, and 6 virus grown in cultures of human embryos or tonsil or adenoid cells; (c) Types 1, 2, 3, and 4 virus grown in HeLa cells; (d) Types 1, 4, and 5 virus grown in monkey kidney cells; and (e) control material consisting of virus-free tissue-culture maintenance fluid. Inoculums were administered by intranasal instillation by swabbing the oropharynx, by inhalation of atomized suspensions, by swabbing the palpebral conjunctiva, or by dropping suspensions into the conjunctival fornix. Volunteers were also inoculated intramuscularly and intradermally with heat- or formaldehyde-inactivated Type 3 adenovirus grown in monkey kidney cells.

All inoculums contained penicillin and streptomycin, and were bacteriologically sterile when tested on blood agar and thioglycollate broth. Similarly, all monkey kidney culture inoculums and the seed cultures used for preparing HeLa culture inoculums, were tested as described previously in laboratory animals [10] for possible contaminating, nonbacterial pathogens. In order to insure complete freedom from viable tissue cells, fluids were removed after all cells had demonstrated cytopathogenic effects; these fluids were frozen at -20° C for at least two weeks, then thawed, centrifuged at 2,000 or 4,000 rpm for 20 minutes, filtered through a

Drs. Bell, Huebner, Rowe, Suskind, and Paffenbarger are with the U. S. Department of Health, Education, and Welfare, Public Health Service, National Institute of Allergy and Infectious Diseases, Laboratory of Infectious Diseases, Bethesda, Md. Dr. Ward is with the Lobund Laboratories, Notre Dame University, Notre Dame, Ind. (formerly at Johns Hopkins University).

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UF sintered glass or Selas 0.03 filter, and refrozen until used.

Usually, the study of a new virus type or a new route of inoculation was initiated in small groups at the Maryland Reformatory and these were followed by confirmatory studies of larger groups at the Federal Reformatory. Study subjects were white and Negro male volunteers generally 21–29 years of age. During the course of observation, neither the observers nor participants knew which person received test or control inoculums, or which inoculated site received infective material. Test and control subjects were selected by random sampling to insure comparability among groups, except when susceptibles were selected on the basis of preinoculation antibody titers. Blood serums were collected just before inoculation and again some three weeks later. The laboratory methods used for virus culture and identification and for serologic complement-fixation and neutralization tests have been described in previous papers.[3, 5] Prior to inoculation, participants were examined medically to eliminate those with poor health or acute illness.

After test and control materials were inoculated, participants were examined and temperatures taken almost daily throughout the period (usually ten days) when illness was anticipated. Usually these examinations were made independently by two or more of the authors. The procedure was to record objective findings first and then elicit subjective complaints and symptoms. The eyes were examined for conjunctivitis; the nasal passages for inflamed or edematous mucosa, serous or purulent discharge, and airway obstruction; and the mouth and throat for inflammation, exudate, and lymph follicle hypertrophy. Complaints were then elicited, followed by inquiry as to headache, cough, malaise, chilliness, feverishness, sore throat, rhinorrhea, and nasal obstruction. In the early Maryland studies an arbitrary method of scoring clinical findings served as an index of acute illness.[12] In the later studies, tabulations included any manifestation of illness that persisted for two or more consecutive days and was noted independently by at least two observers.

Description of Individual Studies and Results

Early Maryland Studies M 8/53, M 1/18/54, M 1/25/54, M 5/54, and M 6/54—Intranasal Instillation of Adenovirus Types 1, 2, 4, 5, and 6

Each study at the Maryland Reformatory (Study Series M) comprised 20 volunteers who were often not isolated prior to inoculation but always kept under hospital group isolation during the observation period. The five early Maryland studies were exploratory in nature and included only 20 controls, since the chief objective was to observe if recognizable illness or infection would follow intranasal inoculation of a 1 ml dose of suspensions containing adenoviruses. Table 1 summarizes the results of these studies; it shows the number of volunteers receiving various types of inoculums and the number developing illness and complement-fixing antibodies, together with their preinoculation homologous neutralizing antibody status.

Minor respiratory illness, classified by an arbitrary scoring method but manifest chiefly by nasopharyngeal catarrh, occurred from two to five days after virus inoculation in 35 per cent and 36 per cent respectively, of volunteers without or with preinoculation neutralizing antibodies, and in a nearly equal 40 per cent of the 20 controls who received virus-free material. On the other hand, a postinoculation complement-fixing antibody rise to various homologous and heterologous antigens occurred in 65 per cent, 47 per cent, and 0 per cent of these respective groups. It

Table 1—Summary of Early Maryland Studies—Number of Volunteers with Illness by Preinoculation Neutralizing Antibody Titer and Complement-Fixing Antibody Response According to Type and Source of Adenovirus Inoculated Intranasally

Inoculum		Total No.		No. Tested For N. Ab. and C. F. Rise	Preinoculation Homologous N. Ab. Titer					
					< 1:4			⩾ 1:4		
Adenovirus Type	Source *	Vol.	Ill.		Vol.	Ill.	C. F. Rise	Vol.	Ill.	C. F. Rise
1	Ad	10	7	9	4	3	2	5	3	2
2	Em	9	4	7	2	2	2	5	1	3
1 and 2	Ad	11	4	7	2	1	2	5	1	4
4	NWN	10	0	10	4	0	2	6	0	2
4	NWI	10	0	9	4	0	1	5	0	1
5	Ad	13	5	13	5	1	5	8	4	1
2 and 5	Ad	10	8	7	1	1	1	6	5	5
6	Tn	7	2	6	1	0	0	5	2	3
Subtotal		80	30	68	23	8	15	45	16	21
Per cent			(38)			(35)	(65)		(36)	(47)
None Maint. Fluid (Per cent)		20	8 (40)	None (0/20) had a C. F. Rise						

* Ad, Em, and Tn = virus inoculated direct from tissue culture of human adenoid, embryo and tonsil cells. NWN = pooled human nasal washings known to contain naturally occurring Type 4 virus plus normal rabbit serum. NWI = same as NWN except immune rather than normal rabbit serum added.

may be noteworthy that illness followed inoculation of all viruses except Type 4. The Type 4 inoculum differed from others in that it consisted of pooled human nasal washings known to contain naturally occurring virus plus rabbit serum; other inoculums were culture-grown viruses without rabbit serum. Though not shown in the table, illness occurred in 15 (42 per cent) of 36 volunteers with induced infection (four-fold rise in CF antibodies) and in nine (28 per cent) of 32 without evidence of infection. This difference is not statistically significant. Thus the minor respiratory illnesses observed could not be attributed to the viruses inoculated, despite serologic evidence of infection.

The number of volunteers observed in these early studies with group hospital isolation was comparatively small, and the relative amounts of virus inoculated were not well standardized. Also, it was recognized that psychological factors, allergies, or primary irritations from the inoculums could have influenced the results. Hence, investigations were begun at the Federal Reformatory in Chillicothe, Ohio (Study Series C) using larger groups of volunteers, including a noninoculated control group, and using better standardized doses of virus grown in HeLa and monkey kidney cell cultures.

Study C—3/54—Intranasal Instillation of Adenovirus Types 1, 2, and 3

The first Chillicothe study (in Study Series C) comprised 267 volunteers made available by the reformatory staff. Participants were not isolated but continued their routine activities except for daily visits to the hospital during the study. Forty volunteers, 18–20 years of age, served as a noninoculated control group and were observed in the same manner as other participants. The remaining 227 volunteers, 21–29 years of age, were distributed at random into five groups comprising 41, 44, 50, 50, and 44 individuals. The five groups were found to be nearly equal in distri-

bution of attributes such as age, race, work site, and histories of prior respiratory illnesses, thus confirming their random selection. Aside from age, the noninoculated group had a similar distribution of these attributes.

Inoculated volunteers had 1 ml of inoculum instilled in their nostrils. The first, second, and third groups received HeLa-cell-grown adenovirus, Types 1, 2, and 3, respectively. The fourth group, an inoculated control group, received virus-free tissue-culture maintenance fluid. The fifth group received a pool of three human nasal washings known to contain Type 3 adenovirus. The sixth group was the noninoculated control group mentioned above.

Table 2 indicates that infection followed inoculation as there was a rise in the postinoculation complement-fixing antibody titer. This infection correlated with susceptibility as it was more frequent in persons without than with detectable preinoculation neutralizing antibodies. Rises were more frequent in volunteers receiving tissue-culture-grown virus than in those receiving nasal washings; presumably the latter inoculum contained smaller amounts of virus. No biologic significance can be attributed to the difference in frequency of complement-fixing antibody rises in volunteers receiving Types 1, 2, and 3 virus since only Type 1 virus antigen was used in these tests. Previous studies [4] showed that Type 1 antigen gave an $\geqslant$ fourfold complement-fixing antibody response in only 76 per cent of persons infected with other virus types.

Tables 3 and 4 show the percentage occurrence of various illness manifestations by various attributes. The chief objective finding and subjective symptom was nasal obstruction or discharge. Illness began on the second to fifth day following inoculation and subsided on the seventh to tenth day. A few of the volunteers had temperatures above 100° F and were hospitalized for close

Table 2—Study C-3/54—Number of Volunteers with Complement-Fixing Antibody Response by Preinoculation Neutralizing Antibody Titer According to Type and Source of Adenovirus Inoculated Intranasally (Number with C. F. Response/Number of Volunteers)

Adenovirus Type * Inoculated	Study Group	Preinoculation Homologous N. Ab. Titer: $<1{:}4$ No.	$<1{:}4$ Per cent C. F. Rise	$\geqslant 1{:}4$ No.	$\geqslant 1{:}4$ Per cent C. F. Rise	No Test No.	No Test Per cent C. F. Rise	Total No.	Total Per cent C. F. Rise
1 (HeLa)	I	9/9		16/27		0/0		25/36	69
2 (HeLa)	II	8/9		12/28		3/5		23/42	55
3 (HeLa)	III	8/13		13/34		1/3		22/50	44
Subtotal		25/31	81	41/89	46	4/8	50	70/128	55
3 (Nasal Wash.)	V	2/14	14	2/26	8	0/1	..	4/41	10
None (Maint. Fl.) (Not Inoc.)	IV VI	..	..	..	..	1/81	1	1/81	1
Total		27/45	60	43/115	37	5/90	6	75/250 †	30

* (HeLa) indicates virus grown in HeLa tissue-culture cells. (Nasal washing) indicates a pool of human nasal washings known to contain naturally occurring Type 3 virus.

† Seventeen volunteers not tested for C. F. antibody rise.

Table 3—Study C-3/54—Percentage of Volunteers Tested Having Various Indexes of Illness According to Preinoculation Neutralizing Antibody Titer and According to Postinoculation Complement-Fixing Antibody Response

Illness Indexes	Virus Inoculated Groups I, II, III, and V				Nonvirus Inoculated Control Groups IV and VI
	Preinoculation Homologous N. Ab. Titer		Rise C. F. Antibodies ⩾ 4 Fold		
	< 1:4	⩾ 1:4	Yes	No	
Volunteer's Opinion	41	35	32	38	27
Subjective Symptoms	43	39	32	43	24
Cough	4	2	3	3	4
Nasal Discharge or Obstruction	41	35	30	40	22
Sore Throat	2	5	5	3	1
Objective Findings	39	34	41	31	32
Nasal Discharge or Obstruction	33	28	34	25	31
Nasal Inflammation	13	9	11	9	3
Throat Signs	7	3	7	3	4
Number of Volunteers Total Tested	46	122	74	95	90
	168		169		

observation. All participants had chest roentgenograms before and after virus challenge; these showed no evidence of acute pathology attributable to the inoculum. Tables 3 and 4 show that illness occurred in each study group, but the frequencies of manifestations were not significantly related to preinoculation neutralizing antibody status, to rises in complement-fixing antibody titer, to type of virus inoculated, or even to whether virus was inoculated. This surprising finding prompts reiteration that the illness manifestations tabulated represented only those persisting for two or more days as recorded by two or more investigators examining independently. Furthermore, each investigator recorded objective findings before eliciting subjective symptoms, and without reference to his findings at previous examinations. The volunteer was never informed of the examiners' findings. There was no respiratory disease outbreak among the 1,500 or more other persons at the Chillicothe institution immediately preceding, during, or following the period of observation.

The Chillicothe study, utilizing larger groups of volunteers, including inoculated and noninoculated controls, larger, better standardized doses of virus, and more meticulous clinical observation, led to the same conclusions as the early Maryland studies. Minor respiratory illness followed inoculation, but could not be attributed to the viruses inoculated, despite serologic evidence of infection.

Study C—7/54—Instillation of Atomized Suspension of Adenovirus Types 3 and 5

Failure to produce definite illness attributable to inoculation of virus by the intranasal route in all previous studies led to a study in which virus was inhaled. Each volunteer inhaled 1 ml of an atomized suspension of HeLa-cell-grown virus or control material. A total of 50 volunteers were distributed into four groups according to their neutralizing antibody status. Group I, compris-

Table 4—Study C-3/54—Percentage of Volunteers in Each Study Group Having Various Indexes of Illness

Illness Indexes	Study Group / Adenovirus Type Inoc.*	I Type 1 HeLa	II Type 2 HeLa	III Type 3 HeLa	IV No Virus Maint. Fluid	V Type 3 Nasal Wash.	VI Uninoc.	Total Per cent	Total Number of Volunteers
Volunteer's Opinion		39	21	38	28	43	25	33	87
Subjective Symptoms		39	21	38	26	52	22	33	89
Cough		5	2	2	6	2	2	3	9
Nasal Discharge or Obstruction		37	21	32	22	50	22	31	82
Sore Throat		2	2	6	2	5	0	3	8
Objective Findings		37	33	28	34	43	30	34	91
Nasal Discharge or Obstruction		32	33	20	34	34	28	30	80
Nasal Inflammation		7	5	12	4	14	2	7	20
Throat Signs		7	5	4	6	2	2	4	12
Number of Volunteers		41	42	50	50	44	40		267

* HeLa indicates virus grown in HeLa tissue-culture cells. Nasal washing indicates human nasal washings known to contain virus.

ing 17 volunteers without neutralizing antibodies to Type 3 adenovirus, received Type 3 virus. Group II, comprising 14 volunteers with neutralizing antibodies to Type 3 virus, similarly received an aliquot of the Type 3 inoculum. Group III, comprising seven individuals without neutralizing antibodies to Type 5 virus, similarly received Type 5 virus. Group IV, comprising 12 volunteers with unknown neutralizing antibody status, received virus-free tissue-culture maintenance fluid.

This method did not produce substantial evidence of infection as only one volunteer who received virus (Group 1) showed a rise in complement-fixing antibodies. Two to five days after inoculation, mild respiratory illness chiefly manifest by nasal obstruction and discharge occurred with near equal frequency in all study groups, including the control group. It tended to be less frequent and less severe than in the former study as no volunteers were sufficiently ill for hospital observation. Pre- and postinoculation chest roentgenograms showed no changes. Similar to previous studies where virus was inoculated into the nose, illness followed inoculation but could not be attributed to the virus inoculated as it was not significantly related to the presence or absence of preinoculation neutralizing antibodies. In contrast to previous studies, this study showed practically no serologic evidence of infection.

Studies M 2/14/55 and M 2/28/55—Conjunctival Swabbing of Adenovirus Types 3 and 4

When the conjunctival component of naturally acquired illness from Type 3 adenovirus had been established,[13] another study was undertaken at the Maryland Reformatory, using the conjunctival route of inoculation. As previously reported[10] 40 volunteers had adenovirus (20 received Type 3 and 20, Type 4), grown in monkey kidney cells, swabbed on the palpebral conjunctiva of one eye and virus-free tissue-culture

maintenance fluid swabbed on the conjunctiva of the other (control) eye, without the volunteer knowing which eye received virus. Twenty volunteers were without detectable preinoculation homologous neutralizing antibodies, and in two to seven days each developed definite conjunctivitis in the eye swabbed with virus. Virus was isolated from the inoculated eye in each of the 20 volunteers, and all 20 showed a four-fold neutralizing antibody response in their convalescent serums. In contrast, only six of the other 20 volunteers, who had detectable neutralizing antibodies in their preinoculation serums, developed conjunctivitis. Conjunctivitis occurred in the eye inoculated with virus-free inoculum in only two of the 40 volunteers, and these two instances were secondary to conjunctivitis in the eye receiving virus. It was concluded that swabbing Types 3 and 4 adenovirus on the conjunctiva of susceptible volunteers produced definite easily recognizable illness resembling pharyngoconjunctival fever.

Study C—3/55—Conjunctival and/or Throat Swabbing of Adenovirus Types 1, 4, and 5

These results prompted another study at Chillicothe to determine (a) if adenovirus Types 1 and 5, also grown in monkey kidney cells, would produce illness similar to that produced by Types 3 and 4 virus in the previous study; (b) if Type 4 virus grown in HeLa cells would produce illness to the same extent as that grown in monkey kidney cells; and (c) if Type 4 virus grown in monkey kidney cells would produce illness when swabbed only on the oropharynx. A total of 91 volunteers were distributed at random into five study groups. Each volunteer was swabbed on the lower palpebral conjunctiva of each eye and on the posterior oropharynx with either live virus or virus-free maintenance fluid. Virus was swabbed onto one eye and the throat of volunteers in study Groups I and II, onto one eye only in study Groups III and IV, and onto the throat only in study Group V. During the observation period neither the observers nor recipients knew which site received virus. Specimens were collected from each eye and the throat from 78 volunteers on the fifth, and from all volunteers on the ninth postinoculation day and cultured for virus isolation.

The inoculums produced infection as indicated by postinoculation complement-fixing antibody responses to

Table 5—Study C-3/55—Number of Volunteers with Complement-Fixing Antibody Response According to Preinoculation Neutralizing Antibody Titer and Postinoculation Virus Isolation and Conjunctivitis

		Preinoculation			Postinoculation					
		Homologous N. Ab. Titer			Virus Isolation 5th or 9th Day		Conjunctivitis			
		<1:4	1:4	>1:4	+	−	Def.	Questionable	No	Totals
Complement Fixing Response	≥4 fold	28	13	4	36	9	38	5	2	45
	2 fold	5	5	6	*7	9	8	3	5	16
	None	5	15	10	†7	23	9	6	15	30
	Total	38	33	20	50	41	55	14	22	91
Per cent Response	≥4 fold	74	39	20	72	22	69	36	9	50

* Two Type 4's showed homologous N. Ab. rise; two Type 5's and one Type 1 showed no such rise.
† Four Type 4's showed homologous N. Ab. rise; three Type 5's showed no such rise.

Table 6—Study C-3/55—Number of Volunteers with Fifth or Ninth Day Virus Isolation by Study Group According to Preinoculation Neutralizing Antibody Titer (Number with Virus Isolation/Number of Volunteers)

Site Inoculated		Eye and Throat				Eye Only				Throat Only	Total I–V	
Virus Type Inoc.*		1 (MK)	5 (MK)	Total		4 (MK)	4 (HeLa)	Total		4 (MK)		
Study Group		I	II	No.	Per cent	III	IV	No.	Per cent	V	No.	Per cent
Preinoculation Homologous Neutralizing Antibody Titer	< 1:4	6/9	7/7	13/16	81	8/8	8/8	16/16	100	0/6	29/38	76
	1:4	3/6	3/5	6/11	54	4/6	5/8	9/14	64	0/8	15/33	45
	> 1:4	0/1	5/11	5/12	42	0/1	1/3	1/4	25	0/4	6/20	30
Total		9/16	15/23	24/39	62	12/15	14/19	26/34	76	0/18	50/91	55

* MK indicates virus grown in monkey kidney tissue-culture cells. HeLa indicates virus grown in HeLa tissue-culture cells.

homologous or heterologous Type 2 antigen and by successful virus recoveries on the fifth or ninth postinoculation day when virus would be expected only if proliferation had occurred. Table 5 shows significant correlation between the complement-fixing antibody response and (a) susceptibility as indicated by no detectable preinoculation neutralizing antibodies, (b) infection as indicated by virus recovery, and (c) illness as indicated by the occurrence of conjunctivitis. As shown in Tables 6 and 7 virus recovery was significantly correlated with various indexes of susceptibility and illness.

Table 6 shows that infection as indicated by postinoculation virus recovery varied inversely with increasing preinoculation neutralizing antibody titer. Postinoculation virus recovery occurred to a nearly equal extent in each of study Groups I–IV. Not shown in the table, volunteers with infection as indicated by a complement-fixing antibody response had a similar distribution in Groups I–IV. No virus was recovered from the 18 volunteers in Group V who received Type 4 virus only on the oropharynx, and only four of these had a complement-fixing antibody response. It is noteworthy that 29 (91 per cent) of 32 susceptible volunteers were infected by swabbing Types 1, 4, or 5 virus on their palpebral conjunctiva.

Table 7 shows the percentage of volunteers with various clinical manifestations according to preinoculation neutralizing antibody status and to postinoculation virus isolation on the fifth or ninth day. In general, the frequency of each manifestation in volunteers without detectable neutralizing antibodies was higher than in those with such antibodies. Also the frequency in volunteers who shed virus was higher than in those from whom virus was not recovered. Though not shown in the table, the frequency of illness manifestations was higher in volunteers with a complement-fixing antibody response than in those without. Thus all the manifestations listed are considered to be associated to a greater or lesser extent with the virus received. Since conjunctivitis was the most definitive manifestation, was the most frequent in occurrence, and was strikingly associated

with both the absence of prechallenge neutralizing antibodies and virus recovery, and since all other manifestations occurred more commonly in persons with conjunctivitis than in those without, conjunctivitis was used as an index of illness.

Additional evidence that the inoculated viruses induced illness was found through comparing local manifestations at the site of virus inoculation and at the site of inoculation of the virus-free maintenance fluid. Using the paired eye as a control minimizes the influence of psychologic, irritant, or allergic factors which may exist when different individuals are used as controls. Fifty-five of 73 volunteers inoculated with virus onto the conjunctiva of one eye developed definite conjunctivitis in that eye. Only five persons developed conjunctivitis in the eye which received virus-free inoculum. Each of these five had bilateral conjunctivitis, which was probably due to a secondary spread, since the finding occurred in the control eye at a later date and was definitely less severe than in the eye receiving virus.

Table 8 shows the occurrence of conjunctivitis in volunteers by study group according to preinoculation homologous neutralizing antibody titer and postinoculation virus isolation on the fifth or ninth day. As with infection, the frequency of conjunctivitis varied inversely with increasing titer of neutralizing antibodies and was uniform in each of study Groups I–IV. No conjunctivitis occurred in volunteers in Group V who received virus only on the oropharynx; however, six of the 18 developed nasopharyngeal catarrh. Conjunctivitis was more frequent in volunteers from whom virus was recovered.

Clinically the conjunctivitis was nonpurulent and follicular, frequently involved both the palpebral and bulbar conjunctiva, and was often accompanied by blepharospasm. It was first noticeable from three to seven days after inoculation, lasted from two to ten days, and was indistinguishable from that previously described for naturally oc-

Table 7—Study C-3/55—Percentage of Volunteers Having Various Indexes of Illness According to Preinoculation Neutralizing Antibody Titer and According to Postinoculation Virus Isolation

Illness Indexes	Preinoculation Homologous N. Ab. Titer			Postinoculation Virus Isolation (5th or 9th Day)		Totals	
	< 1:4	1:4	> 1:4	Yes	No	Per cent	Number of Volunteers
Investigators' Opinions	63	33	20	68	15	44	40
Subjective Symptoms	76	52	30	72	39	57	52
Headache	32	3	10	22	10	16	15
Cough	26	33	0	28	15	22	20
Nasal Discharge or Obstruction	50	36	20	44	32	38	18
Sore Throat	24	15	20	30	7	20	18
Eye Complaints	37	21	5	44	0	24	22
Objective Findings	79	61	35	88	32	63	57
Throat Signs	21	15	5	24	5	26	14
Conjunctivitis	79	58	30	88	27	60	55
Number of Volunteers	38	33	20	50	41		91

Table 8—Study C-3/55—Number of Volunteers Having Conjunctivitis by Study Group According to Preinoculation Neutralizing Antibody Titer and According to Virus Isolation on Fifth or Ninth Day (Number with Conjunctivitis/Number of Volunteers)

Site Inoculation		Eye and Throat				Eye Only				Throat Only	Total	
Virus Type Inoc.*		1 (MK)	5 (MK)	Total		4 (MK)	4 (HeLa)	Total		4 (MK)	I–V	
Study Group		I	II	No.	Per cent	III	IV	No.	Per cent	V	No.	Per cent
Preinoculation Homologous Neutralizing Antibody Titer	<1:4	7/9	7/7	14/16	87	8/8	8/8	16/16	100	0/6	30/38	79
	1:4	5/6	3/5	8/11	73	4/6	7/8	11/14	78	0/8	19/33	58
	>1:4	0/1	5/11	5/12	42	0/1	1/3	1/4	25	0/4	6/20	30
Total		12/16	15/23	27/39	69	12/15	16/19	28/34	82	0/18	55/91	60
Virus Isolation	Yes	8/9	12/15	20/24	83	11/12	13/14	24/26	92	0/0	44/50	88
	No	4/7	3/8	7/15	47	1/3	3/5	4/8	50	0/18	11/41	27

* MK indicates virus grown in monkey kidney tissue-culture cells. HeLa indicates virus grown in HeLa tissue-culture cells.

curring pharyngoconjunctival fever.[13] No keratitis developed in any of the volunteers. The preauricular lymph node on the involved side was frequently enlarged. Pharyngitis developed in 26 (36 per cent) of the 73 volunteers who received virus on the conjunctiva, but it occurred in only one of the 18 who received virus only on the pharynx. The posterior pharynx generally showed vascular injection and lymph follicle hypertrophy. In a few instances, acute unilateral tonsil hypertrophy with vascular injection and unilateral submaxillary lymphadenopathy occurred on the same side as the uniocular conjunctivitis. Since temperatures were taken only during the morning examination, fevers at other times would have been missed. Twelve volunteers were hospitalized for observation and nine of these (in Groups II–V) had temperatures over 100° F. Rhinorrhea and nasal obstruction occurred in about one-third of the volunteers, including those inoculated only on the pharynx.

Cytological examination was made of smears taken from both eyes of 16 volunteers, each having conjunctivitis in one eye. The smears were stained with Papanicolaou stain. There were no appreciable differences in smears taken from the affected and the paired unaffected eyes, and no definite cytoplasmic or nuclear inclusions were found. Seven conjunctival and 18 palatine-tonsil biopsy specimens were collected from ill persons.* Dr. Louis B. Thomas † reported that histopathological examination of the conjunctival specimens showed a conjunctivitis of moderate

* Appreciation is extended to Dr. James Stanbaugh, Dr. Donald J. Lyle, and Dr. Stephen P. Hogg of Cincinnati, who visited the Federal Reformatory, performed the biopsies, and concurred with the clinical observations.

† Head, Surgical Pathology and Post Mortem Service, Pathologic Anatomy Branch, National Cancer Institute.

intensity characterized predominantly by migration of lymphocytes into the submucosal connective tissue. Examination of the tonsil specimens indicated that the clinical enlargement was due to hypertrophy and hyperplasia of the tonsillar lymphoid tissue augmented to a slight extent by congestion of vessels and edema of the peritonsillar connective tissue.

This study, C–3/55, and the earlier Maryland study M–2/55, showed that adenovirus Types 1, 3, 4, and 5 grown in monkey kidney cells and Type 4 virus grown in HeLa cells produced conjunctivitis and infection when swabbed on the conjunctiva. No conjunctivitis occurred when Type 4 virus grown in monkey kidney cells was swabbed only on the oropharynx.

Study M—9/55—Conjunctival Swabbing or Instillation into Conjunctival Fornix of Adenovirus Type 4

The data on naturally occurring pharyngoconjunctival fever[13] indicated that swimming may have enhanced the occurrence of conjunctivitis. Since infection and conjunctivitis resulted from swabbing various types of adenovirus on the lower palpebral conjunctiva, another study was set up to determine whether dropping the virus into the conjunctival fornix would similarly produce conjunctivitis. Nine volunteers had Type 4 virus swabbed on the conjunctiva of one eye, and virus-free maintenance fluid dropped into the other eye. Fourteen volunteers had an aliquot of the same virus dropped into one eye and the control material swabbed onto the conjunctiva of the other eye. None of these 23 participants had detectable preinoculation neutralizing antibodies against Type 4 virus. Eight of the nine swabbed with virus developed conjunctivitis, but only three of the 14 receiving virus drops developed conjunctivitis. No conjunctivitis occurred in control eyes. Although there was no way of assuring that each group received the same quantity of virus, it seems probable that the drops placed a greater quantity of virus in the conjunctival sac than the swabs. It was concluded that the irritation of swabbing enhanced occurrence of conjunctivitis. By analogy, conjunctival irritation from swimming may increase the frequency of conjunctivitis in naturally acquired infection and may offer a vulnerable route for virus invasion, thus abetting the likelihood of epidemics of pharyngoconjunctival fever.

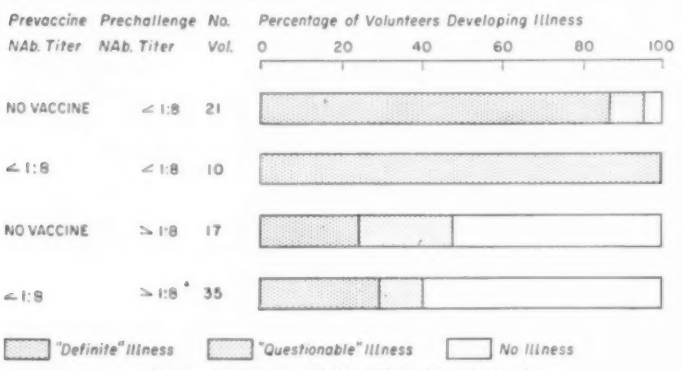
Studies C and M, 4/55—Intramuscular Inoculation of Inactivated Vaccine and Subsequent Challenge with Adenovirus Type 3

The procedures wherein a readily recognizable conjunctivitis was consistently induced in some 90 per cent of susceptible volunteers presented a method for evaluating an adenovirus vaccine. Heat- and formaldehyde-inactivated virus vaccines were prepared and their prophylactic value studied.[11] Such vaccines were prepared from Type 3 virus suspensions and given intramuscularly * in one or three doses to volunteers with no detectable neutralizing antibodies against Type 3 virus. No untoward reaction of any kind occurred. Thirty-five out of 45 vaccinated volunteers developed neutralizing antibodies. These 35, together with 17 volunteers having naturally acquired antibodies and 31 volunteers having no detectable antibodies, were challenged by swabbing Type 3 virus on their conjunctiva.

On the seventh day after challenge, virus was isolated from 77 per cent of volunteers without prior antibody and from 29 per cent and 35 per cent of the two groups with vaccine-induced and

* One-tenth ml of vaccine also was given intradermally as a skin test together with a control injection of maintenance fluid. Local edema of $\geqslant 5$ mm occurred 24–48 hours after injection, predominantly in persons with preexisting neutralizing antibodies.

Figure 1—Percentage of Volunteers Developing Illness Following Type 3 APC Virus Challenge According to Prevaccine and Prechallenge Neutralizing Antibody (N. Ab. Titers)



(Reprinted in Essence—J.A.M.A. 159:988 (Nov. 5), 1955.)

naturally acquired antibodies. Furthermore, 90 per cent of volunteers without prechallenge antibodies developed conjunctivitis, as contrasted with 29 per cent and 24 per cent of the two groups with vaccine-induced and naturally acquired antibodies. It was clearly evident that volunteers with vaccine-induced antibodies were protected against the artificially induced infection and disease to the same extent as volunteers with naturally acquired antibodies. The percentage of volunteers in each group developing definite and questionable illness is shown in Figure 1.

Table 9 summarizes the occurrence of conjunctivitis in 205 volunteers who have had one eye swabbed with adenovirus and the other eye similarly swabbed with virus-free maintenance

Table 9—Summary of Conjunctivitis Occurrence in Volunteers Having the Conjunctiva of One Eye Swabbed with Virus-Free Maintenance Fluid and the Other Eye Similarly Swabbed with Various Types of Adenovirus According to Preinoculation Neutralizing Antibody Titer (Number of Eyes Developing Conjunctivitis/Number of Eyes Swabbed)

Preinoculation Homologous Neutralizing Antibody Titer *	One Eye Swabbed with Virus-Free Maintenance Fluid (Secondary Spread)	Other Eye Swabbed with Adenovirus Types				
		Total	1	3	4	5
< 1:4 HeLa or < 1:8 Monkey Kidney Cell Test	8/92	86/92	7/9	40/43	32/33	7/7
Per cent		(93)				
≥ 1:4 HeLa or ≥ 1:8 Monkey Kidney Cell Test	2/113	45/113	5/7	17/60	15/30	8/16
Per cent		(40)				
Total	10/205	131/205	12/16	57/103	47/63	15/23

* Monkey kidney cell test more sensitive for antibody determination at low dilutions.[18]

fluid. It shows that in the absence of detectable neutralizing antibodies at the 1:4 (or 1:8 dilution in monkey kidney cells), 86 (93 per cent) of 92 virus-inoculated eyes developed definite conjunctivitis. In contrast, conjunctivitis developed in 45 (40 per cent) of 113 volunteers with detectable antibodies at this low level. This titer level appears to indicate the level of 90 per cent susceptibility to a challenge-induced illness which was the chief concern in these studies. The serums were not titered high enough to establish the antibody level necessary for a high degree of immunity. In 10 instances conjunctivitis in control eyes followed that in contralateral, virus-inoculated eyes, and these instances were considered secondary infections. Adenovirus Types 1, 3, 4, and 5, all that have been tested to date, produced conjunctivitis in similar frequency, nature and intensity.

Discussion

Swabbing the conjunctiva with adenovirus consistently produced laboratory evidence of infection and produced a readily recognized clinical illness in 94 per cent of volunteers when they were susceptible as indicated by absence of neutralizing antibodies. An inactivated Type 3 adenovirus vaccine was prepared which artificially induced antibody formation and was accompanied by a conversion from susceptibility to immunity. The demonstration that a monovalent vaccine would protect against a challenge-induced illness stimulated the preparation of a polyvalent Type 3, 4, and 7 adenovirus vaccine. Field studies are under way to determine whether this vaccine will protect against naturally occurring adenovirus disease.

A suitable vaccine would appear to be especially useful in military recruits who are reported to have a high incidence of disease due to adenovirus.[14] The value of such a vaccine in other groups depends basically upon the amount of respiratory illness caused by adenovirus and on the duration of vaccine protection. This should be studied particularly in children who have a high incidence of acute febrile respiratory illness. Nursery studies now in progress indicate a high prevalence of adenovirus infection. Nine children less than three years of age have been given the Type 3 vaccine. Seven had no detectable prevaccine Type 3 neutralizing antibodies and all seven developed such antibodies in their postvaccine serums. Although further studies are indicated, this suggests that the vaccine served as a primary antigenic stimulus and may have prophylactic value in children.

A live virus vaccine also deserves exploration since the studies reported here indicate that nasopharyngeal inoculation of adenovirus resulted in antibody formation without illness which could definitely be attributed to the viruses used. In addition, live adenoviruses have been inoculated in large quantities intra-arterially and into malignant tumors of persons without apparent ill effect.[15] Live virus vaccines, however, present a problem in assuring absence of other live virus contaminants which may be dangerous.[16, 17]

The nasopharyngeal route of adenovirus inoculation did not produce conjunctivitis; however, nasopharyngeal catarrh characterized by rhinorrhea, nasal obstruction, and throat discomfort occurred 2–4 days following inoculation in some 30 per cent of volunteers. This symptom complex was usually called a "cold" and seemed similar to many illnesses occurring in volunteer studies reported by others.[2, 12, 18, 19] In the present studies, these "colds" tended to occur more frequently in volunteers without homologous neutralizing antibodies and in volunteers who had a complement-fixing antibody response, but the differences were not statistically significant and the "colds" could not

definitely be attributed to the viruses inoculated. In addition, similar "colds" occurred within 2–4 days in a nearly equal proportion (some 30 per cent) of control volunteers who either were not inoculated or received virus-free maintenance fluid. This occurred in each of the three studies where such controls were observed simultaneously with virus-inoculated groups. The time of occurrence of these "colds" did not suggest secondary spread from the virus-inoculated volunteers and none showed a complement-fixing antibody response. In the two early Maryland studies the volunteers were observed under group hospital isolation and in Study C 3/54 they were not generally isolated. There was no evidence of a concurrent epidemic in the nonstudy population of either institution during the periods when these studies were carried out.

These findings indicate that a substantial number of the "colds" observed in these volunteer studies were not caused by the inoculated viruses. In view of these observations, it becomes pertinent to reexamine hypotheses on the etiology of "colds." The general epidemiologic picture is compatible with a view that "colds" are caused by viruses. Although some "colds" may be due to viruses, others may be due to other causes. It is of interest that the Army studies [2] have shown no lasting immunity to "colds" when individuals were rechallenged with aliquots of the same inoculums. This may be interpreted to indicate that either these particular "colds" were not due to viral agents or that the presumed viral agents did not produce the lasting immunity so common in other viral infections. In the present studies, "colds" developed in volunteers who were not inoculated and in those inoculated with virus-free maintenance fluid. In one study, seven volunteers were noted to complain of nasal irritation several hours after inoculation and all seven later developed "colds." The possible influence of irritant, psychologic, allergic, and other factors deserves further study.

The "colds" presumably due to viruses may be caused by infection with agents which do not produce a lasting immunity or they may be due to many immunologically distinct viral agents which separately induce sustained immunity. In the spectrum of respiratory disease due to various known viral agents (influenza, psittacosis, adenoviruses, etc.) the milder illnesses are often interpreted as "colds." These mild reactions may be due to constitutional factors of the host, to route of invasion, to virulence, or to dosage of the agent. On the other hand, some "colds" may represent an "immediate" or "accelerated" reaction to reinfection with homologous virus in partially immune or sensitized individuals. Another possibility is that some colds may be due to reactivation of latent viral infections such as herpes or dormant adenoviruses.

Volunteer studies provide limited but valuable information; however, one should be wary of extrapolation of results to the phenomenon of the natural occurrence of "colds." Volunteers are not representative of the general population; the method, dosage, and route of inoculation are artificial; the inoculums are complex substances; the susceptibility-immunity status is generally not known and may vary tremendously in small groups; and the clinical manifestations are difficult to measure with finite accuracy. In spite of these limitations, the present report exemplifies that volunteer studies, when properly planned, can answer specific questions that otherwise might require years of observation under natural circumstances.

Summary and Conclusions

Studies of adenovirus infection, immunity, and disease in adult volunteers

have been described. The intranasal instillation of adenovirus Types 1, 2, 3, 4, 5, or 6 and the swabbing of the oropharynx with Type 4 virus have produced infection as demonstrated by a complement-fixing antibody response. Such inoculations have commonly been followed by minor respiratory illness, chiefly manifest by an afebrile nasopharyngeal catarrh, which could not be attributed to infection with these viruses.

Both infection and illness were readily produced in susceptible volunteers by swabbing the lower palpebral conjunctiva with adenovirus Types 1, 3, 4, or 5. The frequencies of infection and illness were similar when virus grown in either HeLa or monkey kidney cells was used. Infection was demonstrated by recovery of the homologous virus from the eye or throat from five to nine days after inoculation and by complement-fixing antibody response. Illnesses occurred from two to seven days following inoculation, generally persisted from four to eight days, were occasionally febrile, and were characterized chiefly by a follicular conjunctivitis. Often pharyngitis with vascular injection and lymph follicle hypertrophy was seen. These illnesses included complaints of eye irritation and discharge, nasal discharge and obstruction, sore throat, and occasionally cough and headache. Both objective and subjective symptoms were associated with demonstrated infection, and illness occurred predominantly in volunteers without detectable prechallenge homologous neutralizing antibodies. Swabbing viruses onto the conjunctiva produced a higher frequency of conjunctivitis than did dropping virus into the conjunctival fornix.

Heat- and formaldehyde-inactivated virus vaccines were prepared against Type 3 adenovirus. When adult volunteers without detectable Type 3 neutralizing antibodies were inoculated intramuscularly with these vaccines, 78 per cent developed Type 3 neutralizing antibodies, and no untoward reactions occurred. Such vaccinated persons were protected against challenge-induced illness apparently to the same extent as adult volunteers with naturally acquired antibodies.

ACKNOWLEDGMENT—The inmates and staff of the Federal Industrial Reformatory, Chillicothe, Ohio, and the Maryland State Reformatory for Males, Breathedsville, Md., cooperated in this study. We are greatly indebted to Warden R. P. Hagerman, M.D., and Chief Medical Officers Edward Slaten, M.D., and T. P. Hackett, M.D., of the Chillicothe Reformatory, and to R. L. Clopper, assistant superintendent of the Maryland Reformatory, who actively assisted in the performance of these studies.

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World Multiple Sclerosis Literature

Through a grant of the National Multiple Sclerosis Society to the Excerpta Medica Foundation of Amsterdam, Holland, abstract of the world's current literature on demyelinating diseases will be available in the English language, reportedly for the first time. The results will be published in a monthly journal containing 100–150 abstracts and distributed among scientists and physicians, universities, and libraries throughout the world.

It is hoped that by bringing to scientists a greater awareness of the world's literature on the disease, achieving the control of multiple sclerosis will be hastened. Frederick L. Stone, M.D., medical director of the National Society, is a member of the 10-man editorial board of scientists that will oversee the work. Seven others are drawn from as many United States medical schools and two are Europeans.

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Atomic Radiations

On June 12, 1956, the National Academy of Sciences of the United States and the National Research Council of England released simultaneously their independent official reports on the Biological Effects of Atomic Radiations. Their epoch-making findings were essentially the same, although the studies were not made in collaboration.

In the United States the studies were initiated by the academy some eight months ago, at the request of the Atomic Energy Commission.

Dr. Detlev W. Bronk, President of the academy, appointed a group of scientists to investigate the effects of high energy radiation on living things. Funds for the study were provided by the Rockefeller Foundation. Individual committees have made detailed studies, which will be released at a later date, on genetics, pathology, agriculture, meteorology, oceanography and fisheries, the disposal and dispersal of radioactive wastes. Many of these studies will be continued after the completion of the first and in some instances the preliminary reports.

To the health officer and his associated workers the reports are of tremendous interest and significance. Although most of the public attention is focused upon military weapons and their use, it is pointed out that, so far as radiation is concerned, peacetime and wartime aspects are not entirely unrelated.

When world-wide atomic power industry becomes fully developed, its accumulated waste products will represent more radiation than would be released in any atomic war. The essential difference is that this latter radiation will be imprisoned and regulated and hence not broadcast to nature. This fact, however, underscores the magnitude of the coming problem.

A second significant comment is in the emphasis which the report places upon the fact that even very low levels of radiation may have serious biological effects.

The essential primary findings are as follows:

1. Up to the present time the control of peacetime development of atomic energy has been careful and successful.
2. As the industry expands, radiation problems, if they are met intelligently and vigilantly, need not stand in the way of the large-scale development of atomic energy.
3. At present the United States population is exposed to radiation from
   a. the natural background
   b. medical and dental x-rays
   c. fall-out from atomic weapons testing.

The 30-year dose to the gonads received by the average person from each of these sources is estimated as follows:

a. background—about 4.3 roentgens
b. x-rays and fluoroscopy—about 3 roentgens

c. weapons tests—if continued at the rate of the past five years would give a probable 30-year dose of about 0.25 roentgens.

If tests were conducted at the rate of the two most active years, this dosage would be in the neighborhood of 0.5.

4. The major problem in routine waste disposal is what to do with the wastes resulting from the processing of reactor fuel. At the moment no method of disposal of these high level wastes is available.

5. The average exposure of the population's reproductive cells to radiation above the natural background should be limited to 10 roentgens from conception to age 30.

6. Individuals should not receive a total accumulated dose to the reproductive cells of more than 50 roentgens up to age 30 years, and not more than 50 roentgens additional up to age 40.

The report carries a number of additional recommendations for international, national and local measures for regulation, particularly in the fields of the medical and dental applications of radiation.

In this new and rapidly moving area of industrial development, the health officer's objective mounts. His intelligent approach to the problem will be tremendously facilitated by the documents referred to above.

Accident Prevention

Comment has appeared on a number of occasions in these editorial columns on the health officer's interest and responsibility in the general field of accident prevention. Home, industrial, and highway accidents are becoming increasingly a problem in preventive medicine. It is salutary and gratifying that some health officers in this country are already assuming this responsibility with ingenuity and with measurable success. In accomplishing these tasks they are making use of familiar tools in epidemiology and administration. They are prevailing increasingly upon designers and operators of houses, industry and highways to incorporate into these structures accident prevention facilities and ideals.

For all of these workers the four reports recently issued by the Department of Industrial Hygiene of the Harvard School of Public Health are to be commended for careful reading. The reports deal with the human factors in highway transport safety. They report the results of preliminary investigations by a team of scientists with specialized training in the fields of engineering, psychology, physiology, physical anthropology, and medicine.

Studies have been directed toward this increasing field of hazard by the use of the current tools of preventive medicine and engineering. The studies have been under the direction of Ross A. McFarland, Ph.D., of the Harvard School of Public Health. They cover:

1. Human body size and capability in the design and operation of vehicular equipment
2. A summary report of vehicular evaluation
3. Human factors in highway transport safety, and
4. Human variables in motor vehicle accidents.

In this large study the causes of accidents are interpreted in terms of the interrelationships between the host (driver), the agent (vehicle), and the environment (roadway, illumination, presence of patrols, etc.), as in the study of epidemics in the field of preventive medicine.

At last the whole subject of accident prevention is being approached from a scientific epidemiologic standpoint. The health officer's participation must necessarily be an integral part of this entire program.

A COMMITTEE REPORT

Proposed Report on Educational and Other Qualifications of Public Health Sanitarians

This is a provisional report published at the request of the Committee on Professional Education of the American Public Health Association before transmittal to the Governing Council in order to permit the members and Fellows of the Association to review it and to offer criticism and suggestions. All comments will be carefully weighed by the Committee on Professional Education and accepted changes will be incorporated in the report before presentation to the Governing Council for action. Address comments to Secretary, Committee on Professional Education, American Public Health Association, 1790 Broadway, New York 19, N. Y.

I. Public Health Sanitarian Defined

A public health sanitarian is a person whose education and experience in the biological and sanitary sciences qualifies him to engage in the promotion and protection of the public health. He applies technical knowledge to solve problems of a sanitary nature and develops methods and carries out procedures for the control of those factors of man's environment which affect his health, safety, and well-being.

II. General Scope of the Field

Sanitarians are employed by federal, state, municipal, and county health departments. They are being engaged in increasing numbers in the food and dairy industry as sanitation supervisors and in quality control positions. In other industries they serve as sanitation consultants and as technical sales representatives.

They serve as teachers in colleges and universities and conduct personnel training programs in state and local health departments.

In official health agencies they constitute the second largest single group, being exceeded only by public health nurses. The complexity of the sanitarian's duties touches all phases of community life, draws upon knowledge of the physical, biological, engineering and social sciences, and is interwoven in nearly all activities of a complete public health program. Because of the many and varied contacts made by the sanitarian in his day-to-day duties he exerts a significant influence upon the public's judgment and opinion of the entire health department.

III. Functions and Duties of the Public Health Sanitarian

Under the general supervision of the health officer, or other person in respon-

This proposed report is a revision of the Report on the Educational Qualifications of Sanitarians approved by the Governing Council on November 10, 1948, and is intended to supersede the earlier report.

sible charge, the public health sanitarian carries out a variety of duties which are investigational and educational in nature. In addition, he is required to interpret and enforce public health laws, ordinances, and regulations. He is in close daily contact with dairy farmers, milk and food plant operators, and proprietors of all types of retail food service establishments. His work requires investigations of domestic water supplies, sewage disposal facilities, and the disposal of other community wastes. He is concerned with insect and rodent control and with sanitary conditions at hotels, motels, trailer parks, resorts, recreational camps, swimming pools, and bathing areas. Schools and institutions may be routinely inspected. Certain aspects of the hygiene of housing may come within his jurisdiction. Home safety and accident prevention may be included among his duties.

As a member of the team composed of the health officer, sanitary engineer, public health nurse, and others on the professional staff, his responsibilities relating to duties mentioned also include assistance in epidemiological investigations, the conducting of surveys, and the analysis of data obtained thereby; the determination of sanitation problems, including civil defense planning and emergency disaster aid, education of the public in regard to such problems, and the development of programs for solving them; evaluation of sanitation laws and regulations and the formulation of recommendations for necessary changes and additions; assistance with the organization of community groups interested in sanitation programs and the promotion of sanitary practices through the use of the various publicity media; study and research in the science and principles of public health to stimulate and increase knowledge and better understanding among the people; and the administration of field and office work.

IV. Opportunities for Professional Advancement

Classification of personnel on the basis of duties and functional responsibility is commonly used in commerce and industry. A system of classification not only serves to establish lines of job responsibility, but equally important, serves to encourage persons in lower grades to aspire to higher positions. Attainment of positions of a higher grade should be based on merit and demonstrated ability to assume and carry out responsibility and upon experience. Promotions should be based upon an appraisal of technical qualifications, personal attributes, and the successful demonstration of leadership qualities.

Proposed Classifications

Five basic levels for the public health sanitarian are suggested as shown in the table on the next page.

Public Health Sanitarian I—This is the entrance or trainee level and permits recruitment of college or university graduates wtihout prior experience.

Public Health Sanitarian II—This classification, in addition to requiring a college or university degree, requires one year of experience in public health or in work of a closely related nature. An employee of this class should be able to assume some professional responsibility for certain phases of environmental sanitation field work.

Public Health Sanitarian III—This may be considered principally as a specialist position in selected fields of work. To qualify for this class a person should be required to have three or more years experience in environmental sanitation, in addition to a college degree. This position may include certain supervisory responsibilities. Such position might include supervision and general direc-

Title	Education	Minimum Public Health Experience	Public Health Courses
Public Health Sanitarian I	Bachelor's degree	none	Inservice and on-the-job training
Public Health Sanitarian II *	Bachelor's degree	1 year	Inservice and on-the-job training
Public Health Sanitarian III	Bachelor's degree	3 years	Special seminars and inservice training
Public Health Sanitarian IV	Master's degree in public health	4 years	One year of graduate study leading to an M.P.H. degree (desirable)
Public Health Sanitarian V	Master's degree in public health	6 years	One year of graduate study leading to an M.P.H. degree

* Graduates with a B.S. degree in sanitary science and public health, because of specialized preparation and field training, should start at the Sanitarian II level.

tion of a section involving milk or food sanitation, housing, rodent and insect control, or general sanitation.

Public Health Sanitarian IV—This may be considered principally as a position at the supervisory and administrative level. At least four years of public health and sanitation experience should have been gained before assuming this position. A person in this class could be in charge of a bureau or division within a municipal, large county, or district department of health. The position would involve program planning, development, and evaluation along with certain administrative and supervisory duties. The promotional pattern would be to move from Sanitarian III to IV. Prior to assuming a position at this level, at least one year of the four-year experience requirement should have involved responsibility for the direction of certain other sanitation staff personnel. For this class a graduate degree in public health is desirable and such degree may be considered the equivalent of one year of experience.

Public Health Sanitarian V—This classification may be considered as a position at the supervisory, advisory, or consultant level. It would be operative in large local health departments and within the structure of state departments of public health. The holder should have had six or more years' experience in environmental sanitation, at least two of which should have been in a responsible supervisory position. The minimum academic requirement would be a graduate degree in public health which may be considered the equivalent of one year of public health experience. The holder of the position should have had broad general experience in environmental sanitation or should be a specialist in one or more phases of sanitary control. His work would involve the direction of personnel in a bureau or division, program planning, assistance to other members of the public health team, and the rendering of advisory assistance for both administrative guidance and program evaluation. Such position should be held by a person who has technical competence, has demonstrated ability to work effectively with others, and has leadership qualities.

In the preparation of the 1948 report on Educational Qualifications of Sanitarians,[1] a questionnaire was sent to the

responsible civil service or merit system agency in each state. The agencies were selected from a list prepared by the Council of State Governments. Forty-one states replied. The merit system listed several positions at the county and local level, as well as civil service positions for the state. Among the most frequent of the 48 titles reported were the following: State Advisory Sanitarian, Chief of Division of Sanitary Inspection, Supervising Sanitarian, Senior Sanitarian, Assistant Sanitarian, Sanitarian, Supervisor of Inspectors, Senior Sanitary Inspector, Sanitary Inspector. Some sanitarians also were graded as administrative assistants to the health officer and as deputy health officers.

V. Recommended Educational Background

A. Academic Curriculum

In 1951 a "Working Conference on Undergraduate Education in Sanitary Science" [2] was held at Battle Creek, Mich., under the sponsorship of the W. K. Kellogg Foundation. As a result of this conference a comprehensive report was issued which prescribed uniform curriculum requirements. The recommendations of this conference have been quite closely followed by those institutions offering undergraduate training in sanitary science. This uniform curriculum leads to a B.S. degree in sanitary science and public health.

A program of instruction such as the following is highly desirable for the training of the public health sanitarian:

The first two years—courses, such as English, economics, government, sociology, anthropology, social institutions, speech, etc., and sciences, such as mathematics, elementary bacteriology, chemistry, physics, psychology, zoology or physiology or general biology.

The second two years—advanced general bacteriology, medical entomology, and/or parasitology, and public health courses to include communicable disease control, public health administration and law, health education, principles of environmental sanitation, epidemiology, biometry, principles and practices of water supply and sewage disposal, control of production and distribution of food and milk, and laboratory procedures used in the maintenance of a sanitary environment. Classwork is followed with approximately three months of supervised field training in branch offices of a state health department or in local municipal or county health departments.

B. Personal Qualities

Personal qualities of the individual play a significant role in public health work. The ability to get along with others and to guide and influence their thinking has an important bearing upon individual progress. While it is recognized that law enforcement is a necessary part of environmental sanitation work, the approach of the educator and adviser should be cultivated and used. Arbitrariness, officiousness, and similar characteristics which offend others serve to break down a cordial and friendly working relationship among those subject to regulation and supervision. The ideal is a fine balance of technical ability coupled with pleasing personal qualities. The sanitarian possessing these attributes will be both highly respected and effective in the community where he works.

Some personal qualities especially to be desired are the following:

Initiative
Tact and good judgment
Pleasing appearance
Good health and good habits of personal hygiene
Enthusiasm for the work
Ability to deal with people
Industrious work habits
Integrity
Social consciousness

C. Institutions Offering Four-Year Courses for Sanitarians

Within the present decade, and earlier in some instances, there have been de-

veloped among certain colleges and universities of this country four-year undergraduate courses geared specifically to the training of students in sanitary science. Curriculums have been planned that give the student cultural courses in literature and the arts along with basic work in the physical, biological, and social sciences. Completion of the four-year course leads to a bachelor of science degree.

At the present time there are 16 colleges or universities that have such a curriculum and offer courses in this field.[3] These are as follows:

University of California, at Berkeley and Los Angeles
University of Denver, Denver, Colo.
Florida State University, Tallahassee
University of Florida, Gainesville
Indiana University (School of Medicine), Indianapolis
University of Massachusetts, Amherst
University of Michigan, Ann Arbor
University of North Carolina, Chapel Hill
University of Oklahoma, Norman
Rutgers University, New Brunswick, N. J.
San Jose State College, San Jose, Calif.
Southern Illinois University, Carbondale, Ill.
Tulane University of Louisiana, New Orleans
Utah State Agricultural College, Logan
State College of Washington, Pullman
University of Washington, Seattle

VI. Graduate Education

An increasing number of sanitarians holding a bachelor's degree find sufficient satisfaction and challenge in public health as a career to take further academic training at the graduate level. Most accredited schools of public health will admit sanitarians holding a bachelor's degree for work toward a master's degree provided they have had requisite courses in the basic sciences and have had at least three years of suitable experience.

It is recommended that sanitarians wishing to advance to supervisory and administrative positions in public health take one year of graduate work to supplement their undergraduate training and their work experience. Courses should be selected in conference with the faculty of the school, placing emphasis upon public health administration, program planning and balance, epidemiology, public health law, environmental sanitation, health education, and personnel guidance. Schools of public health currently offering graduate training are the following:

University of California School of Public Health
Columbia University School of Public Health
Harvard University School of Public Health
The Johns Hopkins University School of Hygiene and Public Health
University of Michigan School of Public Health
University of Minnesota School of Public Health
University of North Carolina School of Public Health
University of Pittsburgh, Graduate School of Public Health
University of Puerto Rico, Department of Preventive Medicine and Public Health
University of Toronto School of Hygiene
Tulane University School of Medicine, Department of Public Health
Yale University School of Medicine, Department of Public Health

VII. Future Outlook

Employment opportunities for well trained and qualified public health sanitarians are good. Currently, the supply of persons trained in sanitary science and public health falls far short of the demand. Present indications are that there is little likelihood of any marked change in the immediate future.

In 1954 a report issued by the Public Health Service indicated there were then employed in state and local health departments 9,200 persons engaged in environmental sanitation work. The report indicated further that if all existing vacancies could be filled and if all departments reporting could bring their

staffs to the desired complement, approximately 2,000 additional persons would be needed.[4] While the figure of 2,000 may represent the ideal in terms of sufficient personnel to carry on requisite sanitation work, it is necessary to point out that budgetary and other limitations frequently preclude attainment of the ideal in terms of staffing. A more realistic figure demonstrative of the current need is contained in Public Health Monograph No. 13, Staffing of State and Local Health Departments, 1951: "State and local health departments reported 5,589 budgeted positions for sanitarians of which 310 were vacant. Budgeted positions for physicians, nurses, and sanitarians represented almost two-thirds of all those reported and well over half of the vacant budgeted positions were in these three categories." [5]

While a precise figure on the number of vacancies is difficult to give, available evidence leaves little doubt that several hundred vacancies do exist in official health agencies in this country and that employment opportunities for the trained and qualified public health sanitarian are especially good.

Salary scales have shown improvement in the past few years. In the period, May, 1948, to August, 1954, salaries rose 44.0 per cent for all sanitation personnel employed by local public health departments.[6] For the sanitarian with specialized training the salary situation is definitely improving and opportunities for advancement are gained through experience and graduate training.

Among other encouraging signs is the development of higher standards of education and training for public health sanitarians. This is noticeable in employment announcements issued by civil service departments and other employment agencies. These recruitment announcements specify persons with a college degree, preferably those trained in the sanitary and biological sciences.

Opportunities in industry for sanitarians are good also. The food industry in its many and varied ramifications seeks technically trained men to supervise plant sanitation, instruct workers in sanitary methods, and to control other factors that enhance product sanitary quality. Pest control companies, sanitary supply and detergent manufacturers likewise find that men trained and experienced in sanitary science can perform effectively in their organizations where technical training is an asset. In fact, many capable men are lost to public health agencies because of better salaries in industry. Industry recognizes that sanitary control is an important feature in the over-all production and manufacturing picture. This situation serves as an added incentive for public health agencies to meet competitive salaries and to retain capable workers for environmental sanitation work in public health departments.

VIII. Registration for Sanitarians

Five states and one territory now have provision for the registration of sanitarians. These are: California, Louisiana, Oklahoma, Oregon, Utah, and the Territory of Hawaii. Legislative acts have been passed in each instance to establish legal registration procedures.

In California the 1945 law states, "The State Department (of Health) shall certify as a registered sanitarian any person who qualifies himself by one of the following procedures." [7] Procedures are then set forth.

The Louisiana act was passed in 1954. This act establishes the Louisiana Board of Examiners for Sanitarians. "The Board shall consist of seven members, three of whom shall be respec-

tively, the Dean of the College of Arts and Sciences of Louisiana State University and Agricultural and Mechanical College, the Dean of the College of Arts and Sciences of Tulane University of Louisiana, and the President of the Louisiana State Board of Health, and four of whom shall be duly recognized practicing sanitarians appointed by the Governor." The act became effective January 1, 1955.[8]

In Oklahoma[9] a registration law passed by the legislature in 1953 has authorized the State Board of Health to establish a Department of Registration. The act provides further that the State Board of Health establish the "Department," which shall consist of five persons subject to registration under this act.

In Oregon[10] legislation was passed in 1951. This legislation established in the State Board of Health ". . . a department to be known as the Department of Sanitarians to consist of five members to be appointed by the Board."

In Utah[11] legislation was similarly passed in 1951. Responsibility for registration of sanitarians was placed in the Department of Registration and the director of this department authorized to accept applications for registrations. To assist the director ". . . a committee of five persons, each of whom shall have had a minimum of five years experience as a sanitarian" (shall be appointed).

Territory of Hawaii[12]—the Governor of Hawaii signed a bill for the licensing and registration of sanitarians on May 13, 1955.

The purpose of registration is twofold, first to establish certain minimum training and experience qualifications prerequisite to registration and, second, to give recognition to the sanitarian as a professional member of the public health team.

The most extensive experience with this type of law has been gained in California where the act was passed in 1945. "In a study of five examinations during 1951 and 1953, and another five between 1953 and 1955, there were 88 per cent and 84 per cent respectively of the applicants who had college degrees. The number of applications received by April, 1956, was 2,041, 250 were refused admittance to the examination or failed to pass it."[12]

The graduate public health sanitarian who is technically equipped to function effectively in public health will unquestionably gain professional status through a properly enacted registration act. Such acts should not be so restrictive, however, that personnel with long experience and demonstrated ability are excluded. Registration generally deals with recruitment of new employees who must qualify through educational preparation and experience.

Registration, however, for professional workers must be based primarily upon demonstrated ability to perform effectively in a field where the application of technical skills is required. Therefore, to have registration meaningful entrance qualifications should be at the professional level. Registration should not be used as a means to insure job security, as an employment barrier, or to protect mediocrity. The groundwork of sound professional qualifications should be carefully evolved and firmly established prior to the time proposed legislative acts are promulgated.

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The Committee on Professional Education expresses grateful appreciation to the subcommittee which assisted with the preparation of this report. This subcommittee consists of:

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NTA 52nd Annual Meeting

At the 52nd Annual Meeting of the National Tuberculosis Association in New York, May 20–25, the Trudeau Medal for contributions to knowledge of the cause, prevention, or treatment of tuberculosis was presented to Max B. Lurie, M.D., of the Phipps Institute and professor of pathology, University of Pennsylvania. Dr. Lurie was cited for "his ingenious talent for experimentation" and particularly for his work on the relation between hormone balance and resistance to tuberculosis.

The fifth annual Will Ross Medal, in honor of a leader in the voluntary tuberculosis control movement in Wisconsin, was presented to Kemp D. Battle of Rocky Mount, N. C., for his many years of service in the fight against tuberculosis, chiefly in his state and local tuberculosis association.

Among the subjects discussed by the 3,000 persons attending the meeting were the extent of the present tuberculosis problem, the role of the voluntary agency in the American scene, the nonhospitalized patient. The closing luncheon was devoted to the international aspects of tuberculosis with Mrs. Oswald Lord of the UN Human Rights Commission and Rajkumari Amrit Kaur, India's Minister of Health, as featured speakers. At the luncheon also NTA was presented a certificate of appreciation for its participation in VA's voluntary service program by VA's Department of Medicine and Surgery.

Dr. Howard Bosworth of Los Angeles succeeded Edward T. Fagan as president of NTA; William M. Morgan, Ph.D. of Alliance, Ohio, was named president-elect. Ellen Boyce, executive secretary of the St. Louis Tuberculosis and Health Society, was elected president of the National Conference of Tuberculosis Workers.

Credit Lines

The Journal cannot furnish copies of items mentioned in Credit Lines. Please send requests to the addresses given.

Television Education Experience

Those who are struggling to explore the enormous potential of television as an educational tool will find a valuable summary of experience in the Connecticut Health Bulletin, July, 1956. Written by Milton Geyer, health education consultant in the State Health Department's Bureau of Health Education, it has the alliterative title of "Operative Cooperative TV for Public Health Education."

Growing out of casual conversations by some health educators about the problems involved in television, the Connecticut TV Committee for Health Education was set up. From "a fuzzy picture of TV health education in Connecticut" in 1953, slow and careful ground work led to the committee's first series of telecasts in July, 1954—the "Stay Well" series of 13 live programs. Presently about $10,000 worth of free air time has been made available to the committee and an audience survey indicates that 5,000 sets are tuned to the committee's weekly "Accent on Living" programs.

Sowing Ideas in Fertile Soil

Late in 1955 A. L. Chapman, M.D., medical director, New York Regional Office of the Public Health Service, began what is called "a project each month." Ten of these have now been sent to state and local health officers in Regions I and II, including New England and the Middle Atlantic states. These run from eight to 10 pages and are specifically designed to give public health administrators both information and ideas.

The first project was devoted to "Local Health Legislation in Rhode Island," as a suggested approach to the problem of providing local health services in New England. Among other topics are: "Pennsylvania Develops a Training Program"; "Are You Ready for Educational TV?"; "Cardiovascular Health Center"; "The Medical Student and Public Health," which describes a Nebraska experiment in introducing medical students to public health; "The Doctor's Office on Wheels," the story of an industry's medical services plan; "One Way to Develop a Local Home Accident Program," and most recently "Have You—an Un-natural Disaster Plan?"

These are written in an informal conversational style and set up typographically for easy reading. They show imagination and insight and represent a method of bringing new and creative ideas to professional attention. Many of these ideas will bear fruit not today nor tomorrow but perhaps in some tomorrow.

Summarizing Fluoridation Experience

As an addition to the growing literature of community experience in fluoridation of public water supplies is a recent study by the Syracuse Bureau of Municipal Research. This study of American Communities Adopting, Then Rescinding Fluoridation was made at the request of the mayor and health commissioner preliminary to drafting appropriate fluoridation legislation.

This is a detailed study of what happened in 29 of 42 communities that

have discontinued fluoridation, as reported by local newspaper editors, presidents of local dental societies, local health officers, and other officials. With its detailed background of the reasons both for beginning and discontinuing fluoridation this should be a valuable document for other communities. The pattern that emerges most clearly is that of anti-intellectualism, with also more than a hint that health educators need to do a better job in this area.

The report, in mimeograph form, is presumably available from the Bureau of Municipal Research, Syracuse, N. Y.

The Connecticut Health Bulletin of the State Health Department in Hartford, for July, 1956, also has a good brief summary of the history and current situation with respect to fluoridation, including a chart showing the progressive decrease in dental caries in Grand Rapids which has had a 10-year experience with fluoridation. Safety, economy, endorsements, and legality are each discussed with the conclusion, "Fluoridation constitutes one of the major public health advances of our generation."

Family Counseling on a Fee Basis

"A New Fashion for Better Living" is the slogan for a family counseling service set up in New York City by the Arthur Lehman Counseling Service. Planned on a fee basis, it operates on the theory that there are many families not clients of social agencies who could be effectively helped by a counseling service. This is an experiment that will be watched with interest. Ruth Fizdale, director, 1382 Lexington Ave., New York City.

State Health Department Bulletin

Wyoming is the most recent State Health Department to join the ranks of those with a bulletin. In this case it's a weekly with the moniker "Good Health for Wyoming."

The early issues are reviewing the state's health history, its public health laws, and acquainting its readers with the "people who are determining the course of public health we follow." Each page signs off with "Wonderful Wyoming" and the slogan is "Dedicated to serving the world's finest people—the people of 'Wonderful Wyoming'."

Booklet with a Double-Edged Purpose

"Can We Help You?" is the story in pictures and text of the relatively new Institute of Industrial Health at the University of Michigan Medical Center. Showing the highlights of its current activities in industrial medicine, occupational health, and industrial hygiene, it is designed primarily to indicate ways it can serve industry, the grants from which support the institute.

A second purpose served, although perhaps not in the original design, would appear to be recruitment of students into the field of industrial health. The selection of pictures and text has been such that they might well draw the interest of university students toward being one of the staff of 50 physicians, industrial hygienists, biochemists, physiologists, physical therapists, and technicians on the staff. Otto T. Mallery, Jr., M.D., associate professor of medicine in the Medical School is director of the Institute of Industrial Health.

More Recruitment Piece Readers

The "Journal of the Student American Medical Association" has been reprinting monthly, beginning in December, 1954, the separate chapters of "Planning Your Career." Subtitled "Consider the Opportunities and Vast Fields Open to You as a Medical Associate," this brochure was first published

by the Michigan State Medical Society in 1948 and reprinted in 1952. It was used virtually without change also by a Wisconsin recruitment group.

The student journal labels the material, "Members of the Team," to acquaint the student with other members of the medical or public health team he will meet in his practice. Public health associates, health educators, dietitians, vital statisticians, medical social workers, and mental health workers are among the job areas described.

J.S.A.M.A. is not reprinting the material. The original brochure, however, may still be available from the Michigan Medical Society, 606 Townsend St., Lansing 15.

Worth Acquiring

Free, up-to-date high school teaching unit on polio and the vaccine. Composed of: No. 11, "Poliomyelitis—A Source Book for High School Students" (order one booklet for each student), No. 12, "Poliomyelitis—A High School Teacher's Guide," containing suggested classroom activities, and the 35 mm color filmstrip "Polio and the Vaccine." The filmstrip, which has 44 frames, is free on loan or may be purchased for $2. Order from the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

"Health Educators at Work"—the seventh and 1956 edition—is off the press. The newest volume—of 60 pages—ranges more widely than previous ones. Material is divided into three main headings, Around the World and at the University, In States, and In Local Areas.

Chile, Egypt, and New Guinea are heard from in the first section. In the second the new alcoholism program of Pennsylvania, the x-ray program in Montana, and the Washington State Conference on Work Simplification in the Home are described. The third describes school and community cooperation in Jackson, Miss.; the Health Department of Gaston County, N. C., as an educational rather than a service agency; the health education of the Wayne County (Mich.) Tuberculosis and Health Society; the two-year project for better health of the Prince Georges County (Md.) League of Women Voters; and the growth of the Charleston County (S. C.) Health Council.

Each of the stories have intriguing titles, each illustrates some of the workable principles of health education and community organization, and each has suggestive material for the imaginative mind.

Lucy S. Morgan and Eunice N. Tyler, both of the Department of Public Health Education, University of North Carolina, Chapel Hill, and North Carolina College at Durham, continue as editors. Each volume, except No. 3, is still available, the three latest at 80 cents each. Reduction for quantity orders.

"Problems of Retirement in Industry" has relevance for health workers involved in community planning for the older age groups. Representing a digest of the third Heart-in-Industry Conference, the 64-page booklet is the result of collaboration between the Chicago Heart Association and the Chicago Association of Industry and Commerce.

There are numerous suggestions both for postponing premature retirement and for preparation for retirement. The emphasis of the pamphlet is upon maintaining socially useful and mentally healthy older citizens.

Program Coordinator, Chicago Heart Association, 69 W. Washington St., Ill., or Health, Education, and Welfare Division, Chicago Association of Commerce and Industry, One N. La Salle St.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Statistics: A New Approach—By W. Allen Wallis and Harry V. Roberts. Glencoe, Ill.: Free Press, 1956. 646 pp. Price, $6.00.

All too often the "new approach" to an old subject turns out to be another case of "plus ça change." In this case there is more than a little substantiation of the claim to originality. The authors have set out, with considerable success, to write a text which would be of interest and value to the student who, not concerned primarily with statistical technics, must understand the nature and methodology of the subject in order to make proper use of its results.

The book is aimed at the general student and emphasizes no particular field of concentration, but a wealth of illustrations refer to applications in almost any discipline, including those of public health. There is very little emphasis on technic, per se, and only the minimum necessary is included. In fact, it may be argued that, in an effort to make statistical procedures as painless as possible, some basic concepts have actually been made a little harder to understand. This, however, is a minor point and a debatable one.

The strongest feature of the book is the thorough discussion of whys and wherefores, and why-nots. The second chapter is devoted to "effective uses of statistics" and the third to "misuses of statistics," and both are excellent. Throughout, in a leisurely and readable manner, ideas are presented and explained so that even the cursory reader will find it difficult to get wrong impressions.

Within the restriction to minimum methodology, a number of subjects of more recent development or orientation are introduced. These include the presentation of sampling with emphasis on estimation and decision making. Topics such as variance analysis, the design of investigations, and the study of time series are not only introduced but are sufficiently discussed to promote full understanding of the principles involved, so that the student is well prepared to go on to additional studies at a more advanced technical level with little danger of having his reason confused by machinery.

It is extraordinary, these days, to find so large and valuable a volume priced so low. The publishers evidently anticipate a large sale—a hope which does not seem overoptimistic.

HUGO MUENCH

Pesticide Handbook—Edited by Donald E. H. Frear (8th ed.). State College, Pa.: College Science Publishers, 1956. 208 pp. Price, paper, $1.25; cloth, $3.00.

This handbook is a continuation and expansion of previous editions that were published under the title, "Pest Control Materials." The main portion of the volume is divided into three sections. The longest by far is the section listing in alphabetical order the names of commercial pesticides. More than 600 products are listed with the percentage content of active ingredients given for each one. A second section presents commercial pesticides listed according to uses and active ingredients. For instance, there is a subsection on adjuvants, under which are listed those chemical compounds used for this purpose. After each particular compound is given a reference to the trade product that was listed in the previous section.

The final section is an alphabetical list of manufacturers and their products.

In addition to the major sections of the volume, there is a portion given over to antidotes for various poisons, a general discussion of types of pesticides and their uses, and a third portion that deals with compatibilities, hazards, and tolerances of the common pesticides. It should be obvious that this volume would have considerable value to anyone who is confronted with the problem of selecting or purchasing pesticides. It should be particularly useful in poison control centers and to individuals involved in treatment of various poisons, since the reference to trade products gives effective ingredients. FRANCIS B. ELDER

Suggested School Health Policies—Prepared by the National Committee on School Health Policies of the National Conference for Cooperation in Health Education (3rd ed.). Washington, D. C.: National Education Association (1201 16th St., N.W.) or Chicago, Ill.: American Medical Association (535 North Dearborn St.), 1956. 40 pp.

The revision of this popular manual which first appeared in print in 1945 and has enjoyed approximately fifteen printings should be of interest and value to all those related in any way to the school health program.

The manual is directed primarily at the school administrator because of the key role which he plays in the development of a program of school health, but all personnel with any responsibility in this phase of education will profit by its contents.

Suggested in the manual are policies with reference to the three major areas of a well rounded school health program: (1) Healthful School Living, (2) School Health Education, and (3) School Health Services. In addition, emphasis is given to the formulation of policies to serve as a guide for the health aspects of physical education, the health program for the handicapped, and the qualifications of school health personnel. The introductory section stresses the need for school health policies and the importance of many individuals and groups working together cooperatively in a common effort.

The section on School Health Education offers some recommendations for scheduling of specific health courses on the junior and senior high school level.

Some thirty-nine selected references on school health add to the usefulness of this manual.

Although the format has been improved considerably, consideration might be given in future revisions to the presentation of the material in an outline form for easier reference.

School administrators, as well as all other personnel concerned with the health and welfare of the school age child, will find a sound, workable, and practical guide in this volume.

ELENA M. SLIEPCEVICH

Stop Dieting! Start Losing!—By Ruth West. New York: Dutton (300 Fourth Ave.), 1956. 192 pp. Price, $2.95.

This would seem to be an attempt on the part of the author to write the final word on reducing. A career in food advertising and a successful personal campaign in the battle of the bulge apparently qualifies the writer to outline a new kind of reducing cure.

The theory is proposed that a "cultural lag" in cooking technology is an external factor responsible for much of today's overweight problem. This is to say that our cookery has not kept pace with modern standards in fashion and health. According to the writer, our recipes for traditional American dishes, high in calories, have not adjusted to the great changes occurring in our energy expenditure since the turn of the century.

On this premise Miss West has concentrated on how to decalorize and modernize favorite fattening foods by short-cutting on fats and starches and with the use of sugarless sweeteners and the new lower calorie processed foods and drinks now available. By such adaptation and with the skillful use of seasonings and herbs, the claim is made that it is possible to alter the calorie content without a noticeable change in flavor or texture of the finished product. Recipes, revamped for calories, are provided for many popular items, including pastry, waffles, muffins, salad dressings, and sauces.

The effectiveness of this cooking strategy, according to the writer, is due to the elimination of the hazard encountered by most reducers—the never-ending battle with the will power. This way you can have your cake and eat it too.

The factor of cost involved in the many special products recommended is minimized. No mention is made of the additional weight loss which might be achieved through the efforts of preparing the foods suggested or in pursuit of the special products mentioned.

GRACE K. FINNEGAN

Education and Health of the Partially Seeing Child—By Winifred Hathaway (3rd ed.). New York: Columbia University Press (2960 Broadway), 1954. 227 pp. Price, $3.75.

The purpose of this book, as stated in the introduction, "is to set forth for administrators, supervisors, teachers, nurses, social workers, and all others concerned with the welfare of the partially seeing, the principles underlying educational procedures and health services for partially seeing children, and to present ways and means by which educational opportunities suited to their needs may be provided for them in urban and rural areas."

Previous editions have demonstrated that the book accomplishes its purpose in accordance with the best thinking of its day, so interest in a new edition centers around what it reveals of changing ideas about educational procedures for the partially seeing.

Modern provisions for education of these children are based on the concept that unnecessary segregation tends to limit the development of the whole child. Instead of registering partially seeing children in special classes, it is now recommended that they be enrolled in regular grades and go to a room with special facilities and a specially prepared teacher only for activities that cannot, or should not, be included in the schedule of the regular classroom teacher.

The same idea underlies the discussion of methods of meeting the needs of partially seeing children in their home rural schools. New in this edition is an account of methods that have proved successful in rural schools under various types of administrative operation.

The section on school health services is little changed from the previous edition. It contains much that is applicable to school health services for all children, as well as to those for the partially seeing.

MARIAN M. CRANE

The Effect of Mothers' Diets on the Intelligence of Offspring. A Study of the Influence of Vitamin Supplementation of the Diets of Pregnant and Lactating Women on the Intelligence of Their Children—By Ruth F. Harrell, Ella Woodyard, and Arthur I. Gates. New York: Bureau of Publications, Teachers College, Columbia University (2960 Broadway), 1955. 71 pp. Price, $1.00.

This is the report of a field study of seven years' duration in which mothers received vitamin tablets or placebos

during the latter part of pregnancy and during lactation, the intelligence of their offspring being tested at the ages of three and of four years. Two populations were studied: 1,200 mothers enrolled consecutively for prenatal care and delivery by the Frontier Nursing Service in Leslie County of eastern Kentucky, and 1,200 women enrolled consecutively for similar service by the King's Daughters' Maternity Center of Norfolk, Va. The first population consisted of mountain whites living in an extremely inaccessible rural area where transportation was chiefly by horseback. The second group was predominantly (80 per cent) Negro, with the remainder described as multiracial; they lived in city tenements and earned their livelihood at day labor.

In each population women were assigned systematically to four groups which received pellets of identical appearance but differing contents. For one group the pellets contained 200 mg of ascorbic acid; for a second, 2 mg of thiamin; the third group received an inert placebo; and the fourth, a pellet which contained 2 mg of thiamin, 4 mg of riboflavin, 20 mg of niacinamide, and 15 mg of iron. All were instructed to take one pellet a day for the remainder of pregnancy and the duration of breast feeding. The investigators who performed the psychological tests of the children did not know which mothers belonged to experimental and which to control groups.

As many offspring of these pregnancies as could be located were tested with the Terman-Merrill revision of the Stanford-Binet intelligence test when they were three and four years old. In Kentucky 811 three-year-old children and in Norfolk 518 who were three years old and 370 who were four years old (tests were administered at both ages to 285 Norfolk children) were tested. The relationship between vitamin medication of the mother and the intelligence quotients of the offspring was evaluated by adequate statistical methods.

The results were not the same in the two populations. In Kentucky the mean intelligence quotients of children born to mothers in the four experimental groups were not significantly different. In Norfolk, on the other hand, children whose mothers received any of the three vitamin-containing pellets showed significantly higher IQ's than those whose mothers were given placebos, but no significant difference was found between the vitamin treatments in regard to the intelligence of the children. The results were similar when the children were tested at three years and at four years of age. The mean intelligence quotients of Norfolk children aged three were: 98.4 for the placebo group; 100.9 for children whose mothers were given ascorbic acid; 101.9 for children of mothers whose pellets contained thiamin alone; and 103.4 for the multivitamin group. The authors found it difficult to secure reliable information regarding the length of time that the mothers received vitamin supplementation and the faithfulness with which they followed instructions regarding the pellets. It was estimated that in Norfolk the mothers took the pellets for an average of 118–141 days of pregnancy and lactation, while in Kentucky where remoteness made supervision even more difficult, pellets may have been taken for an average of 113 days during pregnancy and 178 days during lactation.

The general conclusion of the report was ". . . that vitamin supplementation supplied to pregnant and lactating women under certain circumstances, such as those prevailing in the Norfolk group described in this report, does increase the intelligence of their offspring, at least for the first four years of their lives." The authors are to be congratulated for offering a clear, well written statement which presents the data, a

careful statistical analysis, and a frank discussion of certain shortcomings in a way which will facilitate the evaluation of their contribution by those who are competent in the fields of psychological testing, nutrition, and population research. A. HUGHES BRYAN

Group Discussion-Decision: An Appraisal of Its Use in Health Education—By Betty Wells Bond. Minneapolis, Minn.: Minnesota Department of Health, 1956. 109 pp. Limited distribution.

Here is a detailed and carefully designed research study in an area in which there has been much hypothesizing, but little objective data—the comparison of two different educational approaches to a given problem.

Taking as her goals the carrying out of three specific actions in regard to the problem of breast cancer—(1) the obtaining of a breast examination from the woman's physician, (2) the demonstration to the physician or his assistant of the subject's technic of breast self-examination, and (3) the practice of monthly breast self-examination—Dr. Bond proceeded to test the effectiveness of two methods of health education (lecture and group discussion-decision) in obtaining these goals.

Dr. Bond's results will be no surprise. There is a significant difference in the relative effectiveness of the two methods in obtaining the desired action and in creating persisting motivation over a 13-month period. Group discussion-decision was the more effective, although there were differences in the action obtained for each of the three goals.

The results raise many questions and implications for health education. Of particular interest are the correlations of her data with the use of additional tools, such as articles, pamphlets and films, and the comparative practices of the discussion-decision group and the lecture group.

Those of us who are concerned with planning for educational activities where the goal is change of behavior in adults should find this study especially interesting. This is not a final statement on this problem, but it is an excellent beginning. MARY ARNOLD

Migration and Mental Disease—By Benjamin Malzberg and Everett S. Lee. New York: Social Science Research Council (230 Park Ave.), 1956. 142 pp. Price, $1.50.

This volume, which is "A Study of First Admissions to Hospitals for Mental Disease, New York, 1939–1941," adds greatly to the statistical studies in the field. In the introduction Dorothy S. Thomas, chairman of the Committee on Migration Differentials of the Social Research Council, reviews the studies on migration differentials and effectively presents the background for the present report.

This monograph fulfills well the two purposes described in the introduction, "(1) to demonstrate the methodological possibilities in utilizing the data on characteristics of the population by five-year migration status from the 1940 census and by states of birth and of residence from the 1950 census for analyses of migration differentials; and (2) to fill an important substantive gap in one segment of the field where, for lack of adequate data, speculation has generally been substituted for sound statistical inferences." Malzberg and Lee have used the extensive data available from the New York Department of Mental Hygiene and they explain their methods and definitions in detail. In answering some questions this report raises others and points up the need for further studies of similar nature in other states. It also makes apparent the need for extensive individual case studies to answer such questions as the comparative severity of illness, and whether the unemployment of the 1935–

1940 period affected either the migration or the risk of hospitalization of this recent migrant group over the earlier migrants.

The authors are to be congratulated on this important and sound addition to the statistical studies of mental illness.

MABEL ROSS

Charter for the Aging—A Report on the New York State Conference on Problems of the Aging Convened by Governor Averell Harriman at the State Capitol in Albany, October, 1955. Albany, N. Y.: Office of the Special Assistant, Problems of the Aging (Room 147, State Capitol), 1956. 659 pp. Price, $3.00.

A comprehensive, complete, and adequate review of this challenging volume of 659 pages requires more space than is available. However, it may be noted at the outset that its encyclopedic nature covers practically every phase of the complex problems facing the aged today.

The purposes as stated at the opening plenary session of the conference on October 18, 1955, were:

(1) Help obtain a "grass roots" view as to the needs of older persons and the priorities of these needs;

(2) Help develop programs for older persons in such fields as employment, housing, health and rehabilitation, education and recreation, community care for the aged;

(3) Assist in determining the areas of responsibility which should rightfully belong to private agencies and public agencies in aiding older persons;

(4) Help determine the respective roles of our State and local governments in aiding older persons either through administrative efforts or legislation.

Eleven conference committees of individuals with experience in the fields covered, after thorough study and discussion of pertinent preliminary material furnished each committee, recorded their conclusions and recommendations. Basic preliminary studies had been prepared by outstanding authorities who had served as consultants to the Office of the Special Assistant to the Governor.

Although the assignment to each of the committees was well carried out, this reviewer was especially impressed with the report of the Committee on Health, "Medical Care and Rehabilitation," which fills 26 pages.

The committee recognized that "medical care of older persons should not be separate and apart from the medical care of the rest of the population" and that "housing, opportunities for employment, recreational facilities, social relationships, and other factors are important for the preservation of the health of old people." These "other factors" might well be classified under public health.

Practically every other phase of the complex diversity of problems regarding the aged is covered in a similar manner. Integrating services by cooperation and coordination is stressed. The summary and technical report, together with extensive tables and appendix, make this volume in effect a helpful book of reference unique in its presentation.

The large number of authorities contributing to this volume are specialists in their respective fields and have therefore been able to cover the problems of the aging in a practical and concrete manner. The volume concludes with a special message to the New York Legislature on problems of the aged by Governor Harriman and is dated January 18, 1956. Legislation under 25 headings is recommended, based upon the findings and recommendations of the conference.

RICHARD ARTHUR BOLT

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ACCIDENT SYNDROME, THE. Morris S. Schulzinger. Springfield, Ill.: Thomas, 1956. 234 pp. Price, $6.50.

A. D. L. ACTIVITIES OF DAILY LIVING. REHABILITATION MONOGRAPH X. TESTING, TRAINING AND EQUIPMENT. Edith Buchwald Lawton, New York: Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 1956. 59 pp. Price, $1.00.

ALCOHOLISM AS A MEDICAL PROBLEM. H. D. Kruse. New York: Hoeber, 1956. 102 pp. Price, $3.00.

APPROACH TO MENTAL HEALTH, THE. David T. Maclay. Westport, Conn.: Associated Booksellers, 1956. 144 pp. Price, $3.00.

BIOLOGICAL EFFECTS OF ATOMIC RADIATION, THE. SUMMARY REPORTS, 108 pp. REPORT TO THE PUBLIC, 40 pp. Washington, D. C.: National Academy of Sciences, National Research Council, 1956.

CANCER IN CONNECTICUT 1935–1951. Matthew H. Griswold. Hartford, Conn.: State Department of Health, 1955.

DANISH NATIONAL MORBIDITY SURVEY OF 1950. COMMUNICATIONS # 2, 5, 6, and 7. REPORT OF THE SUBCOMMITTEE FOR THE FIRST YEAR OF INVESTIGATION 1951–1952. Geneva, Switzerland: WHO, Regional Office for Europe, 1956. 3 pamphlets.

FACT BOOK ON YOUTH IN NEW YORK CITY. New York: Research Department, Welfare and Health Council of New York City, 1956. 123 pp. Price, $1.00.

FAMILY LIFE SOURCEBOOK. Oliver E. Byrd. Stanford, Calif.: Stanford University Press, 1956. 371 pp. Price, $7.50.

FUTURE POTOMAC RESOURCES. A series of six papers presented at the January, 1956, winter meeting of the Interstate Commission on the Potomac River Basin, Washington, D. C. Washington, D. C.: Interstate Commission on the Potomac River Basin, 1956. 55 pp.

HISTORY OF THE THERAPY OF TUBERCULOSIS AND THE CASE OF FREDERIC CHOPIN. Esmond R. Long. Lawrence, Kans.: University of Kansas Press, 1956. 71 pp. Price, $2.00.

HOSPITALIZATION AND EVACUATION: ZONE OF INTERIOR. Clarence McK. Smith. Washington, D. C.: Gov. Ptg. Office, 1956. 503 pp. Price, $4.00.

HUMAN VARIABLES IN MOTOR VEHICLE ACCIDENTS—A REVIEW OF THE LITERATURE. Ross A. McFarland and Associates. Boston, Mass.: Harvard School of Public Health, 1955. 203 pp.

KINDERSTERFTE IN NEDERLAND (CHILD MORTALITY IN THE NETHERLANDS) Atlas. J. H. de Haas. Assen, Netherlands: Koninklijke Van Gorcum, 1956. 95 pp. Price, $2.50.

LABORATORY MANUAL FOR PHYSICIANS. AIDS IN DIAGNOSIS AND TREATMENT (11th ed.). Issued by the Division of Laboratories and Research. Albany, N. Y.: State Department of Health, 1956. 90 pp.

LANDMARKS IN THE HISTORY OF HYGIENE. Henry E. Sigerist. New York: Oxford University Press, 1956. 78 pp. Price, $3.00.

MAN AND THE WATERS OF THE UPPER OHIO BASIN. A symposium held at Linesville, Pa., under the joint auspices of the Pymatuning Laboratory of Field Biology, Department of Biological Sciences, the College, and the Department of Public Health Practice, the Graduate School of Public Health, University of Pittsburgh, Pa. University of Pittsburgh Publication Number 1. 1956. 100 pp. Price, $1.00.

NEUROPHARMACOLOGY. TRANSACTIONS OF THE SECOND CONFERENCE MAY 25–27, 1955. Harold A. Abramson. New York: Josiah Macy, Jr. Foundation, 1956. 328 pp. Price, $4.25.

NEW APPROACH TO SCHIZOPHRENIA. Julius I. Steinfeld. New York: Greenberg, 1956. 195 pp. Price, $4.95.

POLYSACCHARIDES IN BIOLOGY. TRANSACTIONS OF THE FIRST CONFERENCE APRIL 27–29, 1955. Georg F. Springer, Editor. New York: Josiah Macy, Jr. Foundation, 1956. 271 pp. Price, $5.00.

PREMARITAL CONSULTATION, THE. A MANUAL FOR PHYSICIANS. Abraham Stone and Lena Levine. New York: Grune and Stratton, 1956. 90 pp. Price, $3.00.

PRINCIPLES AND METHODS OF STERILIZATION. John J. Perkins. Springfield, Ill.: Thomas, 1956. 340 pp. Price, $8.00.

PROGRAMS ON ALCOHOLISM RESEARCH, TREATMENT AND REHABILITATION IN THE UNITED

STATES AND CANADA (3rd ed.). New York: Licensed Beverage Industries, 1956. 36 pp.

PSYCHIATRY, THE PRESS AND THE PUBLIC PROBLEMS IN COMMUNICATION. Washington, D. C.: American Psychiatric Association, 1956. 66 pp. Price, $1.00.

SARGENT GUIDE TO SUMMER CAMPS, THE. (11th ed.). Boston, Mass.: Porter Sargent, 1956. 128 pp. Price, $1.10 paper, $2.20 cloth.

SPORTS INJURIES MANUAL. Donald F. Featherstone. New York: Philosophical Library, 1956. 132 pp. Price, $6.00.

STATES AND THE METROPOLITAN PROBLEM, THE. A REPORT TO THE GOVERNORS' CONFERENCE. Chicago, Ill.: Council of State Governments, 1956. 153 pp. Price, $2.50 paper, $3.00 cloth.

STUDY OF PATIENTS' ATTITUDES TOWARD CARE AT FIRLAND SANATORIUM, A. Catherine E. Vavra and Edith Dyer Rainboth. Seattle, Wash.: Anti-Tuberculosis League of King County, 1955. 176 pp. Price, $2.00.

TEXTBOOK OF GENERAL PHYSIOLOGY. Philip H. Mitchell. New York: McGraw-Hill, 1956. 885 pp. Price, $10.50.

First Sanitation Maintenance Show

A First International Sanitation Maintenance Show and Conference will be held in the New York Coliseum, October 14–16, under the sponsorship of the Industrial Sanitation Management Association, Association of Food Industry Sanitarians, and the National Association of Bakery Sanitarians. In addition to an extensive display of equipment and materials used in industrial sanitation, a scientific program is being prepared. Among the exhibits will be one showing the activities of the Public Health Service in the field of industrial sanitation.

J. Lloyd Barron, manager of the Sanitation Department, National Biscuit Company, New York City, is chairman of the Program Committee for the conference. Public health professional workers are especially invited to attend the show and conference for which there will be no admission charge.

A Selected Public Health Bibliography with Annotations

Toward Long-Term Care—Briefs of nine papers read at the late National Health Forum on Chronic Illness—another condensation that Public Health Reports does so well—will bring you most of the meat of a two-day discussion that was offered to 800 leaders representing 50 national health organizations and many other state and local associations.

ANON. Chronic Illness. Pub. Health Rep. 71, 7:675 (July), 1956.

Life Expectancy—In 1954 the average expectation of life at birth had reached a new high of 69.6 years—an increase of 20.4 years, or 40 per cent, since the turn of the century. Though increases were achieved in all age groups, it becomes clear that further improvements will depend largely on our successes, if any, in postponing cardiovascular-renal diseases and cancer.

ANON. Longevity at Record High in 1954. Statist. Bull. Metrop. Life Insur. Co. 37, 6:4 (June), 1956.

Newcastle Disease—Sera from certain individuals will neutralize Newcastle disease virus. The significance of this reaction was studied in laboratory and field and three aspects of the findings are reported upon in three papers. As this is an obscure condition which we are likely to hear more about in the future, these papers are commended to you.

BANG, F. B., AND FOARD, M. The Serology of Newcastle Virus Infection. J. Immunol. 76, 5:342 (May), 1956.

Virus Survival Studied—In the laboratory virus survives longer in autoclaved or distilled water than in tap water. Apparently, virus inactivation is in someway correlated with "normal" biological flora.

CLARKE, N. A., et al. Survival of Coxsackie Virus in Water and Sewage. J. Am. Water Works A. 48, 6:677 (June), 1956.

Ye Olde Order Changeth—The Cattaraugus County Health Department, which provides direct nursing care to patients in their homes, successfully allocates some of the nurses' functions to a practical nurse.

CULLEN, M. J. The Practical Nurse in the Rural Health Department. Nursing Outlook 4, 7:402 (July), 1956.

Mind and Matter—"One cannot judge obesity simply by the relationship of height and weight. . . . An extremely muscular athlete can be considerably overweight by conventional standards and yet be thin. . . . There is no evidence that fat people absorb food better than thin people. . . . There is no evidence that indicates there is any abnormality of energy metabolism in obesity. . . ." These are just a few observations, culled from many, to let you decide whether or not you will want to read the entire "Practitioners Conference."

FORKNER, C. E., et al. Obesity. New York Med. 12, 13:567 (July 5), 1956.

Project Priorities—In this discussion "offered in the hope that some public health practitioners may be aided," some of the everyday problems in public health administration are reduced to simpler generalizations that may possess "deductive fertility."

JAMES, G. Changing the Priorities in Public Health. Pub. Health Rep. 71, 7:666 (July), 1956.

Sharing Burdens—There are several plans for returning the recovered mental patient to the community. Each fits only certain patients. All are successful only to the degree the community accepts them and pitches in to make them work.

OZARIN, L. D. The Community and the Rehabilitation of the Hospitalized Psychiatric Patient. J.A.M.A. 161, 10:940 (July 7), 1956.

Tuberculin Testing — Among a wide sample of people "about twenty" less than 20 per cent reacted to tuberculin. In a few areas the rate rose to twice the average but in many "rural parts" the rate was less than half.

PALMER, C. E., et al. Tuberculin Sensitivity of Young Adults in the United States. Pub. Health Rep. 71, 7:633 (July), 1956.

Attitudes Toward Alcoholism—In the good old days the alcoholic industrial employee was considered a hopeless bum and was gotten rid of as promptly as possible. More recently he has been judged a helplessly sick man much in need of custodial medical care. Now there is discussed a method of rehabilitation in which some responsibility for his salvation is demanded of the alcoholic while he is given supportive psychiatric and medical treatment in a clinic conducted independently of his place of employment.

PFEFFER, A. Z., et al. A Treatment Program for the Alcoholic in Industry. J.A.M.A. 161, 9:827 (June 30), 1956.

Discussions About Talk—"It is the recipient of the communication who determines whether communication has happened at all. Through his behavior, and only through his behavior, can we tell whether communication has been more than interpersonal noise. . . . To underestimate intelligence is to fail to use the system at its best. To overestimate intelligence is to feed in a mess of confusion that can be turned to no good use." These are lifted from five useful discussions about "communicating and convincing" all of which are earnestly commended to you.

SANFORD, F. H. Interpersonal Communication (and four related papers). Indust. Med. & Surg. 25, 6:261 (June) 1956.

Physiologic Note—Age and obesity increase the likelihood of an abnormal ballistocardiographic response to smoking—all of which suggests that the test described here may detect asymptomatic coronary disease.

STROBER, M. Effect of the Dock Cigarette-Smoking Test on the Ballistocardiogram. J.A.M.A. 161, 11:1059 (July 14), 1956.

Pendulum Swings—Pregnancy in inactive tuberculosis need not be considered a complication. If it occurs in the active case, though the condition is not to be recommended, therapeutic abortion is not wise. These are the findings of a long study covering 241 such pregnancies.

ROSENBACH, L. H., AND GANGEMI, C. R. Tuberculosis and Pregnancy. J.A.M.A. 161, 11:1035 (July 14), 1956.

Handicapped Babies—Can reports of congenital malformation or birth injury reported on live birth certificates serve as a useful medium for case finding? The question is looked into in useful detail as it applies to the New York City situation.

WALLACE, H. M., et al. Newborn Infants with Congenital Malformations or Birth Injuries. Am. J. Dis. Child 91, 6:529 (June), 1956.

Continued Research—Poliomyelitis vaccine sterilized by ultraviolet light is both safe and antigenically effective, these 10 authors report.

WOLF, A. M., et al. Immunogenicity in Children of Ultraviolet-Treated Poliomyelitis Vaccine. J.A.M.A. 161, 9:775 (June 30), 1956.

New Angle?—The cost of initiating a prepayment dental care plan for chil-

dren in a community with an adequately fluoridated water supply would be so much less than in a community with fluorine-deficient water that it should be practical to undertake a complete oral health program for them, these authors argue. For elementary school-age children the cost is estimated to be about $15 per year. Don't you like the term "fluorine-deficient" water?

YOUNG, W. O., AND PELTON, W. J. Planning a Dental Prepayment Program for Children in an Area of Low Caries Prevalence. J. Am. Dent. A. 53, 1:38 (July), 1956.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publication in which they appeared; the addresses are furnished for your convenience.

Am. J. Dis. Child (American Journal of Diseases of Children), American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

Indust. Med. & Surg. (Industrial Medicine and Surgery), 605 N. Michigan Ave., Chicago 11, Ill.

J. Am. Dent. A. (Journal of the American Dental Association), 222 E. Superior St., Chicago, Ill.

J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago, Ill.

J. Am. Water Works A. (Journal of the American Water Works Association), 2 Park Ave., New York 16, N. Y.

J. Immunol. (Journal of Immunology, Virus Research and Experimental Chemotherapy), Williams and Wilkins Company, Mt. Royal and Guilford Aves., Baltimore 2, Md.

New York Med. (New York Medicine), Medical Society of the County of New York. 2 East 103rd St., New York 29, N. Y.

Nursing Outlook, American Journal of Nursing Company, 2 Park Ave., New York 16, N. Y.

Pub. Health Rep. (Public Health Reports), Gov. Ptg. Office, Washington, D. C.

Statist. Bull. Metrop. Life Insur. Co. (Statistical Bulletin Metropolitan Life Insurance Company), One Madison Avenue, New York 10, N. Y.

FCDA-ARC Nurse Disaster Guide

"A Guide for Local Organization and Use of Nurses in Disaster" has recently been developed jointly by the American National Red Cross and the Federal Civil Defense Administration to facilitate community cooperation in disaster planning as it may relate to nursing services. It may also be used as a guide in the coordination of other services in local planning to meet disaster in any form. The guide may be obtained from Federal Civil Defense Administration, Battle Creek, Mich.

Preliminary Program of the Scientific Sessions

84th Annual Meeting

American Public Health Association

and

Meetings of Related Organizations

Atlantic City, New Jersey

November 12–16, 1956

Convention Hall is headquarters for the meeting and all scientific sessions will be held there, unless otherwise noted.

The 84th Annual Meeting officially opens on Monday morning at 10:30 with Part I of the Association Symposium. This general assembly for all delegates will take place in the Ballroom, Convention Hall. The subject is "How Are We Doing in Public Health?" The first APHA Section meetings are scheduled for Monday afternoon and continue through Friday morning.

Related organizations will meet on Monday evening, Wednesday afternoon and evening, and Thursday morning. Some will meet on Sunday as indicated in the following pages.

Part II of the Association Symposium will bring the 84th Annual Meeting to a close on Friday afternoon.

The Registration Desk, at the left of the entrance to Convention Hall, will open at 9:00 A.M. on Monday, at which time final programs will be available. Everyone is expected to register. The registration fee is $5.00 with exemption for nonprofessional wives and husbands.

SUNDAY

ASSOCIATION OF TEACHERS OF PREVENTIVE MEDICINE

9:00 A.M.—Rooms 102, 103, 106, 107, 108, 109, and 116, Ambassador Hotel

THE TEACHING LABORATORY OF PREVENTIVE MEDICINE

Round Tables

Room 102 Statistics	Room 107 Clinical Preventive Medicine
Room 103 Epidemiology	Room 108 Occupational Medicine
Room 106 Public Health	Room 109 Medical Care
	Room 116 Rehabilitation

To be discussed are experiences within fields identified with or related to the teaching role of some departments of preventive medicine. Of interest in the context of a "laboratory" are: (1) the practical working associations of a department within the school and community that favor the form of the teaching program developed; and (2) opportunities provided students for experiential learning in these fields.

2:00 P.M.—Ballroom, Ritz-Carlton Hotel

Presiding: DUNCAN W. CLARK, M.D., President.

FAMILY STUDY AND CARE IN MEDICAL EDUCATION

Panel and General Discussion

On the range and variety of family study programs in medical education. Among other purposes, the use of family studies in illustration of the fields of activity discussed at the morning round tables.

Business Meeting and Election of Officers.

6:30 P.M.—Ballroom, Ritz-Carlton Hotel

Dinner and Evening Session

Experiences on a Visit to India. LEONA BAUMGARTNER, M.D.

Experiences in the Soviet Union. JOHN R. PAUL, M.D.

Tickets for the dinner may be obtained by writing to John J. Phair, M.D., University of Cincinnati College of Medicine, Cincinnati 19, Ohio, enclosing a check for $5.50. Tickets should be obtained in advance.

SUNDAY

CONFERENCE OF STATE AND PROVINCIAL HEALTH AUTHORITIES OF NORTH AMERICA

6:30 P.M.—Room 125, Ambassador Hotel

Dinner and Evening Session

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

9:30 A.M.—Renaissance Room, Ambassador Hotel

Presiding: HOWARD L. BODILY, Ph.D.

Time and Temperature Relationships in the Agglutination Test for Human Brucellosis. BEN E. DIAMOND.

The Application of IBM for Determining the Efficiency of Laboratories Participating in Serologic Evaluation Studies. CHARLES A. HUNTER, Ph.D.; FRANK M. VICTOR; AND DAVID KEITH.

Analysis of Results of Laboratory Evaluation Studies. NELL F. HOLLINGER, Ph.D.

Public Health Aspects of Phage Typing of Staphylococci. JOHN E. BLAIR, Ph.D.

The Clinical Significance of the TPCF Test in Syphilis. WARFIELD GARSON, M.D., AND JOSEPH PORTNOY, Ph.D.

2:30 P.M.—Renaissance Room, Ambassador Hotel

Presiding: HOWARD L. BODILY, Ph.D.

Setting Educational Standards in Massachusetts for Medical Technologists. ELINOR JUDD.

An Administrator's Appraisal of the Role of the Laboratory in a Tuberculosis Control Program. PAUL S. PHELPS, M.D.

Role of the Public Health Laboratory in the Control of Streptococcal Disease and Its Sequelae. ROGER M. COLE, M.D.

Practical Aspects of Establishing a Virus Diagnostic Laboratory. JOAN B. DANIELS.

Recent Developments in the Laboratory Diagnosis of Poliomyelitis, Coxsackie and ECHO (Orphan) Virus Infections. JOSEPH L. MELNICK, Ph.D.

8:00 P.M.—Renaissance Room, Ambassador Hotel

Business Meeting.

SUNDAY

CONFERENCE OF STATE DIRECTORS OF PUBLIC HEALTH TRAINING

2:00 P.M., and 7:00 P.M.—Room 106, Ambassador Hotel

GOVERNING COUNCIL AMERICAN PUBLIC HEALTH ASSOCIATION

3:30 P.M.—Venetian Room, Ambassador Hotel

First Meeting—Followed by Dinner and Evening Session.

NATIONAL ASSOCIATION OF SANITARIANS REGIONAL EDUCATION CONFERENCE

1:00 P.M.—Foyer of 22 Club, Ambassador Hotel

Registration.

2:00 P.M., 5:00 P. M., and 8:00 P.M.—22 Club, Ambassador Hotel

Afternoon Session, Social Hour, and Evening Session.

NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

9:30 A.M.—Carlton Room, Ritz-Carlton Hotel

CHRONIC ILLNESS—REQUIREMENTS FOR THE PROMOTION OF HEALTH

2:30 P.M.—Carlton Room, Ritz-Carlton Hotel

PLANNING FOR THE HANDICAPPED—REHABILITATION SURVEY AND DEMONSTRATION PROJECT, KANSAS CITY, MO.

SUNDAY

NURSE MENTAL HEALTH CONSULTANTS

9:00 A.M.—Morton Hotel

THE CONSULTANT ROLE AND FUNCTION IN RELATION TO ADMINISTRATION AND SUPERVISION

Panel Discussion

Moderator: MARION RUSSELL.

Panel Participants:
JANET JENNINGS, R.N.
RUTH E. SIMONSON, R.N.

Discussion Group Leaders:
RUTH CUMMINGS.
EVELYN GILBERTSON.
TERRY LA LANCETTE.
ELEANOR THOREN.
RUTH WILSON.

Resource Persons:
FLORENCE M. BURNETT, R.N.
PEARL SHALIT, R.N.
RUTH E. SIMONSON, R.N.

2:00 P.M.—Morton Hotel

Research.

Business Meeting.

SOCIETY OF PUBLIC HEALTH EDUCATORS

10:00 A.M.—Room 125, Ambassador Hotel

VIGNETTES—NOTES FROM THE FIELD ON COMMUNICATIONS OPERATIONS

Moderator: ROBERT JOHNSON.

2:00 P.M.—Room 125, Ambassador Hotel

Presiding: WILLIAM GRIFFITHS, Ph.D., President.

Business Meeting.

Report on the Third Annual Meeting of the International Union for Health Education of the Public. SALLY LUCAS JEAN.

7:00 P.M.—Surf Room, Ambassador Hotel

Annual Banquet

MONDAY, 10:30 A.M.

ASSOCIATION SYMPOSIUM

HOW ARE WE DOING IN PUBLIC HEALTH?

Presented in Two Parts

Part I, Monday, 10:30 A.M., Ballroom, Convention Hall

Part II, Friday, 2:30 P.M., Renaissance Room, Ambassador Hotel

Presiding: ABEL WOLMAN, Dr. Eng.

At the last Annual Meeting, the Association Symposium attempted to answer the question, "Where Are We Going in Public Health?" It opened a vista down which many a tentative step has been taken by other exploring groups in the intervening months. The 1956 Symposium will be devoted to a probing of how well we are doing what we are doing, measured by results in accomplishing the ends of public health.

Part I will be in the form of a full-scale debate, pro, con, and rebuttal. Two teams of distinguished persons will address themselves to the proposition "Resolved: that the practice of public health is in tune with the times." Negative and positive sides will be chosen by lot.

In Part II of the Symposium, a reactor panel will relate issues raised by the debate to local situations, carry forward unanswered questions and propose "how-to" methods.

MONDAY, 2:30 P.M.

DENTAL HEALTH SECTION

First Session—Room 10, Convention Hall

Presiding: JOHN T. FULTON, D.D.S., Chairman.

PRIVATE FOUNDATIONS AND DENTAL HEALTH

The Role of the Private Foundation in Dental Research. BASIL G. BIBBY, D.M.D.

The Role of the Private Foundation in Dental Service. MELVILLE HUMBERT, D.D.S.

The Role of the Private Foundation in Dental Education. PHILIP E. BLACKERBY, JR., D.D.S.

The Role of the Private Foundation in Public Health. A. J. WARREN, M.D.

MONDAY, 2:30 P.M.

ENGINEERING AND SANITATION SECTION

First Session—Room 9, Convention Hall

Presiding: EARLE W. SUDDERTH, Chairman.

The Development of the National Water Supply and Sanitation Program in India. C. H. ATKINS.

Water Resources Policy. ROY W. MORSE.

We Do Not Work Alone. ROBERT E. MYTINGER.

Implications of the Midwest Typhoid Fever Outbreak of 1956. FRANK L. WOODWARD.

EPIDEMIOLOGY, MATERNAL AND CHILD HEALTH, AND STATISTICS SECTIONS

Joint Session—Room E, Convention Hall

Presiding: MARTHA L. CLIFFORD, M.D.

STUDIES RELATED TO REPRODUCTIVE WASTAGE

German Measles and German Measles in Pregnancy. THEODORE H. INGALLS, M.D.

A Correlative Study of Congenital Malformations (Preliminary Report). HAROLD JACOBZINER, M.D.; JEAN PAKTER, M.D.; EDWIN M. GOLD, M.D.; AND HERBERT RICH.

Use of Previous Child Loss Data in Evolving Priorities in Maternal Health Services. EDWARD R. SCHLESINGER, M.D., AND NORMAN C. ALLAWAY.

Preliminary Analyses of a Standardized Hospital Obstetric Reporting System, Combining Data from Several Hospitals. SCHUYLER KOHL, M.D.

Longitudinal Studies of Pregnancy on the Island of Kauai, Territory of Hawaii, II Pregnancy Reporting on a Community-Wide Basis and Preliminary Fetal Loss Rates by Period of Gestation. FERN E. FRENCH; LOUISA HOWE, Ph.D.; JESSIE M. BIERMAN, M.D.; ANGIE CONNER, M.D.; AND DOROTHY H. KEMP, M.D.

FOOD AND NUTRITION, OCCUPATIONAL HEALTH, PUBLIC HEALTH EDUCATION, AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Room B, Convention Hall

Presiding: MARION I. MURPHY, R.N.

(Cont.)

MONDAY, 2:30 P.M.

FOOD AND NUTRITION, OCCUPATIONAL HEALTH, PUBLIC HEALTH EDUCATION, AND PUBLIC HEALTH NURSING SECTIONS, (Cont.)

INDUSTRIAL AND COMMUNITY SERVICES PROMOTE FAMILY HEALTH

Panel Discussion

(Title of paper to be announced.) JAMES H. STERNER, M.D.
(Title of paper to be announced.) ALBERT PARKER, C.B.E., D.S.C.

Participants:

CHARLES E. COUCHMAN.
HOWARD W. ENNES, JR.
HAROLD J. MAGNUSON, M.D.
ELIZABETH A. NEUBERT, R.N.
WINSTON OSBORNE.
BERNARDINE E. STRIEGEL.

HEALTH OFFICERS, MENTAL HEALTH, AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Room D, Convention Hall

Presiding: JOHN D. PORTERFIELD, M.D.

SYMPOSIUM ON THE HEALTH OFFICERS' MENTAL HEALTH RESPONSIBILITIES: PRESENT AND FUTURE

The Public Health Nurse's Role in the Hospitalization of Mental Patients and Their Follow-Up After Discharge from the Hospital. GUY V. RICE, M.D.

An Experiment in the Administration of a Local Mental Health Program: The New York Community Mental Health Act. ROBERT H. BROAD, M.D.

Efforts to Define and Help the Health Officer Fulfill His Role in Mental Health Programs. ROGER W. HOWELL, M.D.; J. W. R. NORTON, M.D.; AND CALVIN C. APPLEWHITE, M.D.

Discussants:

RUTH FREEMAN, Ed.D.
ERNEST M. GRUENBERG, M.D.
HERMAN E. HILLEBOE, M.D.
IRA V. HISCOCK, Sc.D.
JOSEPH H. KINNAMAN, M.D.
PAUL V. LEMKAU, M.D.

MONDAY, 2:30 P.M.

LABORATORY SECTION

First Session—Room C, Convention Hall

Q Fever in Texas. J. V. IRONS, Sc.D.; RICHARD B. EADS, Ph.D.; AND JAMES E. PEAVY, M.D.

Rabies in Bats in Florida. NATHAN J. SCHNEIDER, Ph.D.; JAMES E. SCATTERDAY, D.V.M.; ARTHUR L. LEWIS, D.V.M.; WILLIAM JENNINGS; AND H. D. VENTERS.

Quantitative Complement-Fixation Tests in Coccidioidomycosis: A Comparison of Five Methods. CHARLES E. SMITH, M.D.; MARGARET T. SAITO; CHARLES C. CAMPBELL; GRACE B. HILL; SAMUEL SALVIN; JEAN FENTON; MARCUS KRUPP; AND SAMUEL SASLAW.

Laboratory and Public Health Aspects of the Increase in Staphylococcus Infections Due to Antibiotic Resistant Staphylococci. AMEDEO BONDI, JR., Ph.D.

Immune Response in Guinea Pigs and Monkeys to the Individual Components of a Combined DPT Antigen Plus Polio Vaccine. PEARL L. KENDRICK, Sc.D., AND GORDON C. BROWN, Sc.D.

MEDICAL CARE AND STATISTICS SECTIONS, AND THE NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Room A, Convention Hall

Presiding: PAUL M. DENSEN, D.Sc.

STUDIES ON MEDICAL CARE NEEDS AND SERVICES

Measurement of Unmet Health Care Needs in a Rural Area. DONALD G. HAY, Ph.D.

Measuring Quality of Medical Care in Hospitals. LEONARD S. ROSENFELD, M.D.

Health Care and Costs—Some Findings from the Canadian Sickness Survey. JOHN E. SPARKS.

SCHOOL HEALTH SECTION, THE AMERICAN SCHOOL HEALTH ASSOCIATION, AND THE NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Room F, Convention Hall

Presiding: H. FREDERICK KILANDER, Ph.D.

(Cont.)

MONDAY, 2:30 P.M.

SCHOOL HEALTH SECTION, THE AMERICAN SCHOOL HEALTH ASSOCIATION, AND THE NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK, (Cont.)

SCHOOL HEALTH EDUCATORS—RECRUITMENT, PREPARATION, AND PLACEMENT

Professional Preparation in Health Considered Essential for School Personnel in the United States. DORA A. HICKS, Ed.D.

Discussant: CARL L. ANDERSON, Dr.P.H.

Recruitment for the Profession—Panel Discussion.

Participants:
BLANCHE ARMSTRONG.
DONALD N. BOYDSTON, Ed.D.
WALLACE C. FULTON.
CARRIE R. LOSI, Ed.D.

Enrollment and Placement of Health Education Majors, 1952–1955. WARREN H. SOUTHWORTH, Dr.P.H.

Discussant: MARY E. SPENCER, Ph.D.

Showing of film "Health Careers" (13 minutes).

Display of materials on recruitment, professional preparation, and placement of school health educators.

MONDAY, 5:30 P.M.

RECEPTION TO THE PRESIDENT OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

5:30–6:45 P.M., Renaissance Room, Ambassador Hotel, Informal

All Registered Delegates and Exhibitors Are Invited

MONDAY, 6:30 P.M.

* CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

Dinner and Evening Session—Venetian Room, Ambassador Hotel

Report of the Committee on the Kimble Methodology Award.

Presentation of the Award. ELMER L. SHAFFER, Ph.D.

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* Tickets will be on sale at the Registration Desk.

MONDAY, 6:30 P.M.

* CONFERENCE ON MEDICAL CARE TEACHING

Dinner and Evening Session—Room 110, Ambassador Hotel

THE TEACHING OF MEDICAL CARE IN SCHOOLS OF MEDICINE

Moderator: FRANZ GOLDMANN, M.D.

Objectives. JOHN B. GRANT, M.D.

Content. S. J. AXELROD, M.D.

Methods. DUNCAN W. CLARK, M.D.

* ENGINEERING AND SANITATION SECTION

Annual Engineers' Stag Dinner, Preceded by Social Hour at 5:30 P.M., Ritz-Hall, Ritz-Carlton Hotel

* MILITARY GOVERNMENT-CIVIL AFFAIRS PUBLIC HEALTH SOCIETY

Dinner and Evening Session—Ritz Room, Ritz-Carlton Hotel

* NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

Dinner and Evening Session—Green Room, Ritz-Carlton Hotel

MONDAY, 8:00 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

First Session—Ballroom, Ritz-Carlton Hotel

Report of the President. I. P. BARRETT, M.D.

Report of the Secretary. A. O. DEWEESE, M.D.

Community Leaders Plan a Dental Health Program. J. M. WISAN, D.D.S.

The Role Played by:
Public Schools. ABRAM COHEN, D.D.S.
Parochial Schools. JOHN P. LOOBY, D.D.S.
Health and Welfare Council. J. L. T. APPLETON, D.D.S.
County Dental Society. ALBERT L. BORISH, D.D.S.

Mission to Baghdad. CHARLES L. OUTLAND, M.D.

Election of Council Members.

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* Tickets will be on sale at the Registration Desk.

MONDAY, 8:00 P.M.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

First Session—Room 125, Ambassador Hotel

Presiding: EARL O. WRIGHT.

Business Meeting.

ASSOCIATION OF STATE MATERNAL AND CHILD HEALTH AND CRIPPLED CHILDREN'S DIRECTORS

First Session—Room 118, Ambassador Hotel

Meeting of Executive Council. All members are cordially invited.

MENTAL HEALTH SECTION

First Session—22 Club, Ambassador Hotel

Presiding: JOHN D. PORTERFIELD, M.D., Chairman.

The Joint Commission on Mental Illness and Health. JACK R. EWALT, M.D.

MONDAY, 10:00 P.M.

* MENTAL HEALTH SECTION

Social Hour—Room 122, Ambassador Hotel

TUESDAY, 8:00 A.M.

NATIONAL ADVISORY COUNCIL, CLEVELAND HEALTH MUSEUM

Breakfast Session—Room 105, Ambassador Hotel

* TULANE UNIVERSITY ALUMNI

Breakfast Session—Room 108, Ambassador Hotel

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* Tickets will be on sale at the Registration Desk.

TUESDAY, 9:45 A.M.

DENTAL HEALTH AND MEDICAL CARE SECTIONS

Joint Session—Room C, Convention Hall

Presiding: JOHN T. FULTON, D.D.S.

GROUP PAYMENT DENTAL PLANS

The Consumer Experience in the Operation of a Group Payment Dental Program. GOLDIE KRANTZ.

Dental Experience in the Operation of a Group Payment Dental Program. BISSELL B. PALMER, D.D.S.

Responsibilities of Official Health Agencies in Developing Group Payment Dental Plans. NATHAN SINAI, Dr.P.H.

ENGINEERING AND SANITATION SECTION AND THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Joint Session—Room 13, Convention Hall

Presiding: BENN J. LELAND.

AIR POLLUTION

The Present Status of Atmospheric Pollution in the United States. ARTHUR C. STERN.

Air Pollution Research and Control in Great Britain. ALBERT PARKER, C.B.E., D.S.C.

Recent Developments in Atmospheric Odor Control. AMOS TURK, Ph.D.

The Role of Occupational and Environmental Air Pollutants in the Reproduction of Respiratory Cancers. W. C. HUEPER, M.D.

Air Pollution Is Everyone's Business. BENJAMIN LINSKY.

EPIDEMIOLOGY SECTION

First Session—Room 20, Convention Hall

Presiding: ROBERT F. KORNS, M.D., Chairman.

Vectors of Murray Valley Encephalitis. DONALD M. MCLEAN, M.D.

The Natural Occurrence of Hemolytic Streptococci in Normal School Children. ROBERT W. QUINN, M.D.; FLOYD W. DENNY, M.D.; AND HARRIS D. RILEY, M.D.

(Cont.)

TUESDAY, 9:45 A.M.

EPIDEMIOLOGY SECTION, (Cont.)

Epidemiology of Civilian Streptococcal Outbreaks Before and After Penicillin Prophylaxis. DAVID POSKANZER, M.D.; HARRY A. FELDMAN, M.D.; WILLIAM G. BEADENKOPF, M.D.; KENZO KURODA; ANNE DRISLANE, M.D.; AND EARL DIAMOND.

Epizootiology of Vesicular Stomatitis. R. P. HANSON, Ph.D., AND CARL A. BRANDLY, D.V.M.

FOOD AND NUTRITION SECTION

First Session—Room 9, Convention Hall

Presiding: ROBERT E. SHANK, M.D.

PROTEIN NEEDS

World Needs and Problems Relating to Protein and Amino Acids. JAMES B. ALLISON, Ph.D.

Protein Deficiency Disease in Central and South America. NEVIN S. SCRIMSHAW, M.D.

Protein and Amino Acid Requirements of Infants and Children. L. EMMETT HOLT, JR., M.D.

HEALTH OFFICERS AND PUBLIC HEALTH EDUCATION SECTIONS, AND THE NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Room B, Convention Hall

Presiding: DANIEL BERGSMA, M.D.

CITIZEN EVALUATION OF PUBLIC HEALTH PROBLEMS

A Self-Survey of Public Health Needs: Warren County, N. J. MRS. FRANK HINEK.

A Citizen Survey of Chronic Illness and Rehabilitation Needs: El Paso County, Colo. REED WHETSTONE.

Discussion Leader: ROSCOE P. KANDLE, M.D.

TUESDAY, 9:45 A.M.

LABORATORY SECTION

Second Session—Room E, Convention Hall

Technical Briefs:

Advantages of the PVA-Fixative Two-Bottle Stool Collection Technic in the Detection and Identification of Intestinal Parasites. KATHLEEN HARPER; MAURICE D. LITTLE; AND SAMUEL R. DAMON, Ph.D.

The Dye Test and the Complement-Fixation Tests for Toxoplasmosis Antibodies as Diagnostic Aids. ANNE C. KIMBALL, Ph.D.; MARION K. COONEY; AND HENRY BAUER, Ph.D.

Flocculation Tests for Tularemia. CHARLES A. HUNTER, Ph.D.; RUTH BURDORFF; AND BERNICE COLBERT.

Committee Studies:

Advances in the Knowledge of Enteropathogenic E. coli. ERWIN NETER, M.D.

The Expanding Value of Phage Typing Technics. EARLE K. BORMAN.

Protecting Laboratory Workers from Accidental Infections. S. EDWARD SULKIN, Ph.D.

Planning Section Activities:

A Proposed Committee on Plan and Scope. JOHN F. MAHONEY, M.D.

Discussant: JAMES GIBBARD.

A Plan for Cooperation with the Coordinating Committee on Laboratory Methods. HOWARD L. BODILY, Ph.D., AND FERDINAND R. HASSLER, M.D.

Recommendations of the Section Officers. ALBERT V. HARDY, M.D.

Election of Officers.

MATERNAL AND CHILD HEALTH SECTION

First Session—Room F, Convention Hall

Presiding: MARTHA L. CLIFFORD, M.D., Chairman.

Mental Health Approach in Child Health Stations. EDWARD M. DITOLLA, M.D.; GRACE I. DUNBAR, R.N.; AND ISABEL E. MAHONEY, R.N.

On Evaluating the Child Health Conference. LESLIE CORSA, JR., M.D.

The Social Epidemiology of Perinatal Mortality. ESTHER C. SPENCER AND ARTHUR C. HOLLISTER, JR., M.D.

How to Develop and Use Program Policy and Procedure Manuals. A Program Directors Guide. HARVEY L. SHAPIRO.

TUESDAY, 9:45 A.M.

MENTAL HEALTH SECTION

Second Session—Room 21, Convention Hall

Presiding: ROBERT H. FELIX, M.D.

THE PUBLIC HEALTH APPROACH TO MENTAL HEALTH AND ILLNESS—PART I

The Definition of Mental Health and Mental Illness. (Speaker to be announced.)

Established Facts of Etiology and Epidemiology. PAUL H. HOCH, M.D.

OCCUPATIONAL HEALTH SECTION

First Session—Room 1, Convention Hall

Committee Reports:

Education. THOMAS F. MANCUSO, M.D., Chairman.

Small Plant Health Programs. JAN LIEBEN, M.D., Chairman.

Program Coordination. SEWARD E. MILLER, M.D., Chairman.

Inclusion of Occupational Health Activities by Local Health Departments. LESTER M. PETRIE, M.D., Chairman.

Scope. MAJOR GILBEART H. COLLINGS, JR., MC, USA, Chairman.

Appraisal of Industrial Health Services. WILLIAM J. MCCONNELL, M.D., Chairman.

Joint Committee on Industrial Environment. CHARLES D. YAFFE, Chairman.

Joint Committee on Medical Care Implications of Workmen's Compensation. JEROME POLLACK, Chairman.

Section Business.

PUBLIC HEALTH NURSING SECTION

First Session—Room A, Convention Hall

SECURING PREPARED PUBLIC HEALTH NURSES TO MEET NURSING CARE NEEDS TODAY AND IN THE FUTURE

Panel Discussion

(Title of paper to be announced.) LUCILE P. LEONE, R.N.

Moderator: ALBERTA B. WILSON, R.N.

Participants:

ANNE BURNS, R.N.
L. ANN CONLEY, R.N.
HAROLD M. ERICKSON, M.D.
RUTH FREEMAN, Ed.D.
BERWYN F. MATTISON, M.D.
RUTH E. SIMONSON, R.N.

TUESDAY, 9:45 A.M.

SCHOOL HEALTH SECTION

First Session—Room D, Convention Hall

Presiding: FRANKLIN M. FOOTE, M.D., Chairman.

Section Business and Election of Officers.

Committee Reports:

Section Secretary. ELENA M. SLIEPCEVICH, D.P.E.

Membership Committee. MARJORIE L. CRAIG.

Editorial Committee. MARY B. RAPPAPORT, R.N.

Nominations Committee. CHARLES C. WILSON, M.D.

THE HEALTH NEEDS OF THE ADOLESCENT

The Relationship of Emotional Stress to Somatic Health in Adolescents. LESLIE W. IRWIN, Ph.D.

Rest and Restriction: Their Conflict with Adolescents' Development. J. ROSWELL GALLAGHER, M.D.

High School Health Service Problems as the School Doctor Sees Them. MAURICE M. OSBORNE, M.D.

Audience Participation: J. ROSWELL GALLAGHER, M.D., Moderator.

STATISTICS SECTION AND THE AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

Joint Session—Room 10, Convention Hall

Presiding: WILLIAM M. HAENSZEL.

SOME PUBLIC HEALTH AND DEMOGRAPHIC USES OF LIFE TABLE METHODS

The Versatility of the Life Table. MORTIMER SPIEGELMAN.

Some Methodological Problems in Estimating the Probability of Dying from a Specific Cause. JEROME CORNFIELD.

Construction of Life Tables for a State and Smaller Areas Within a State. JOHN H. VINYARD, JR.

Discussant: MONROE SIRKEN, Ph.D.

Section Business.

TUESDAY, 12:30 P.M.

* DELTA OMEGA

Luncheon Session—Room 105, Ambassador Hotel

* ENGINEERING AND SANITATION SECTION

Luncheon Session—Room 125, Ambassador Hotel

Presiding: EARLE W. SUDDERTH, Chairman.

Section Business.

* FOOD AND NUTRITION SECTION

Luncheon Session—Ocean Terrace, Ritz-Carlton Hotel

Presiding: HELEN STACEY, Chairman.

Section Business and Election of Officers.

"Que Pasa?" ESTHER SEIJO DE ZAYAS, Ph.D.

* PUBLIC HEALTH NURSING SECTION

Luncheon Session—Ballroom, Ritz-Carlton Hotel

Presiding: MARION I. MURPHY, R.N., Chairman.

Luncheon Speaker. PLUMA BATTEN.

* SCHOOL HEALTH SECTION

Luncheon Session—22 Club, Ambassador Hotel

Presiding: FRANKLIN M. FOOTE, M.D., Chairman.

The School Health Program in Puerto Rico. VIRIGINIA T. DE BELAVAL.

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* Tickets will be on sale at the Registration Desk.

TUESDAY, 2:30 P.M.

DENTAL HEALTH SECTION

Second Session—Room 10, Convention Hall

Presiding: JOHN T. FULTON, D.D.S., Chairman.

Section Business.

Report of Nominating Committee and Election of Officers.

Committee Reports:

Prepayment Dental Programs.
Curriculum Content of Courses in Preventive Dentistry.
Evaluation Schedule for Local Dental Health Programs.
Field Training for Public Health Dentists.

Discussion of Committee Reports.

ENGINEERING AND SANITATION SECTION

Second Session—Room D, Convention Hall

Presiding: MORTON S. HILBERT, C.E.

High-Free Chlorine Residual in Swimming Pool Waters. ELIZABETH D. ROBINTON, Ph.D.

Report on Bathing Places. WARREN J. SCOTT.

Disaster Housing and Rehabilitation. CHESTER F. PAGE.

The Sanitary Engineering Component of the Public Health Service Commissioned Reserve—Its Composition and Mission. J. L. ROBERTSON, JR.

Report on American Sanitary Engineering Intersociety Board. GEORGE O. PIERCE AND MARK D. HOLLIS, C.E.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Room E, Convention Hall

Poliomyelitis Vaccine in the Fall of 1956. JONAS E. SALK, M.D.

Recent Developments in Specific Prophylaxis of Rabies in Man. KARL HABEL, M.D.

Vaccination Against Acute Respiratory Illness of Adenovirus (RI-APC-ARD) Etiology. MAURICE R. HILLEMAN, Ph.D.; MAJOR REUEL A. STALLONES, MC, USA; ROSS L. GAULD, Dr.P.H.; M. S. WARFIELD; AND S. A. ANDERSON.

(Cont.)

TUESDAY, 2:30 P.M.

EPIDEMIOLOGY AND LABORATORY SECTIONS, (Cont.)

Respiratory Illness Prophylaxis with Adenovirus (APC-RI) Vaccine in Navy Recruits. CAPTAIN MATTHEW J. HANTOVER, MC, USN; JOSEPH A. BELL, M.D.; CLAYTON G. LOOSLI, M.D.; AND ROBERT J. HUEBNER, M.D.

Measles Virus: A Summary of Experiments Concerned with Its Isolation, Properties and Behavior. JOHN F. ENDERS, Ph.D.; THOMAS C. PEEBLES, M.D.; KEVIN MCCARTHY, M.D.; ANNA MITUS, M.D.; AND ANN HOLLOWAY.

The Control of Infectious Diseases in the U.S.S.R. KARL F. MEYER, M.D.

FOOD AND NUTRITION SECTION

Second Session—Room 13, Convention Hall

Presiding: DAVID B. HAND, Ph.D.

RECENT ADVANCES IN AND STUDIES OF NEW METHODS OF FOOD PROCESSING

The Food and Drug Administration Regulations as They Pertain to Foods Processed by New Methods. MALCOLM R. STEPHENS.

The Preservation of Foods by Irradiation. BERNARD E. PROCTOR, Ph.D.

The Use of Antibiotics for the Preservation of Fish and Sea Foods. H. L. A. TARR, Ph.D.

The Use of Antibiotics for the Preservation of Meats and Other Food Products. F. E. DEATHERAGE, Ph.D.

The Occurrence of Antibiotics in Foodstuffs. HENRY WELCH, Ph.D.

HEALTH OFFICERS SECTION

First Session—Room B, Convention Hall

Presiding: DANIEL BERGSMA, M.D., Chairman.

Progress in Professional Training in Pennsylvania. HENRY R. O'BRIEN, M.D.

Public Health and the Population Question. JOHN J. HANLON, M.D.

Performance Report and Program Budgeting: Tools for Program Evalution. LEON J. TAUBENHAUS, M.D.; ROBERT H. HAMLIN, M.D.; AND ROBERT C. WOOD, M.D.

A Pattern for State-Local Relationships in Public Health Administration. JOHN R. PHILIP, M.D., AND MALCOLM H. MERRILL, M.D.

Section Business and Election of Officers.

TUESDAY, 2:30 P.M.

MATERNAL AND CHILD HEALTH SECTION

Second Session—Room 9, Convention Hall

Presiding: MARTHA L. CLIFFORD, M.D., Chairman.

Study of Follow-Up of Children Recommended for Rheumatic Fever Prophylaxis. HELEN M. WALLACE, M.D.; MARGARET A. LOSTY, R.N.; FELICIA OLIVER-SMITH, M.D.; LORETTA AZZARETTI, M.D.; AND HERBERT RICH.

A Review of the Maryland Epilepsy Program. JEAN R. STIFLER, M.D.

Section Business.

MEDICAL CARE AND OCCUPATIONAL HEALTH SECTIONS, AND THE ASSOCIATION OF LABOR HEALTH ADMINISTRATORS

Joint Session—Room F, Convention Hall

Presiding: DEAN A. CLARK, M.D.

MEDICAL CARE FOR INDUSTRIAL WORKERS

Panel Discussion

Management's Viewpoint. E. SIDNEY WILLIS.

Labor's Viewpoint. JAMES O'H. BRINDLE.

Participants:
GEORGE BAEHR, M.D.
WINSLOW CARLTON.
NATHAN KRAMER.
SEWARD E. MILLER, M.D.
L. A. ORSINI.
LEONARD J. RAIDER, M.D.

MENTAL HEALTH SECTION

Third Session—Room 21, Convention Hall

Presiding: ROBERT H. FELIX, M.D.

THE PUBLIC HEALTH APPROACH TO MENTAL HEALTH AND ILLNESS—PART II

Applications of Control Methods to Mental Illness. ERNEST M. GRUENBERG, M.D.

Future Explorations in Mental Health and Disease. BENJAMIN PASAMANICK, M.D.

Section Business.

TUESDAY, 2:30 P.M.

PUBLIC HEALTH EDUCATION SECTION

First Session—Room A, Convention Hall

Presiding: ROBERT O. YOHO.

GETTING INTO NEW FIELDS

Explorations in Patient Education. ELSA J. NELSON, R.N.

Action Research as a Method in Public Health Education. ANGELES CEBOLLERO.

A "Living Interests" Approach to Health Education. BENJAMIN A. SILSBEE.

Health Education Technics in Administration. HOLLIS S. INGRAHAM, M.D.

Discussion Leader: RUTH SUMNER, Ph.D.

PUBLIC HEALTH NURSING SECTION

Second Session—Room C, Convention Hall

Presiding: MARION I. MURPHY, R.N., Chairman.

Section Business.

Election of Officers.

Committee Reports.

SCHOOL HEALTH SECTION

Second Session—Rooms 15, 16, 17 and 18, Convention Hall

OPEN COMMITTEE MEETINGS

Room 15 **Editorial Committee.** MARY B. RAPPAPORT, R.N., Chairman.

Room 16 **Committee on Hearing Conservation.** C. ADELE BROWN, M.D., Chairman.

Room 17 **Committee on Membership.** MARJORIE L. CRAIG, Chairman.

Room 18 **Committee on Research.** J. KEOGH RASH, H.S.D., Chairman.

TUESDAY, 5:30 P.M.

* ASSOCIATION OF THE ALUMNI OF THE COLUMBIA UNIVERSITY SCHOOL OF PUBLIC HEALTH

Social Hour, 5:30–7:00 P.M., Room 105, Ambassador Hotel

All Former Students Are Invited

* NATIONAL TUBERCULOSIS ASSOCIATION

Social Hour, Followed by Dinner at 6:30 P.M., Room 125, Ambassador Hotel

All Tuberculosis Association Workers and Their Guests Are Invited

* UNIVERSITY OF MICHIGAN ALUMNI

Social Hour, 5:30–7:00 P.M., Venetian Room, Ambassador Hotel

TUESDAY, 8:30 P.M.

FIRST GENERAL SESSION

Renaissance Room, Ambassador Hotel

Presiding: IRA V. HISCOCK, Sc.D., President, American Public Health Association.

Addresses of Welcome:
DANIEL BERGSMA, M.D., Commissioner of Health of New Jersey.
SAMUEL L. SALASIN, M.D., Health Officer, Atlantic City, N. J.
DAVID B. ALLMAN, M.D., President-Elect, American Medical Association.

Greetings from the Royal Society for the Promotion of Health. ALBERT PARKER, C.B.E., D.S.C., Chairman of Council, Royal Society for the Promotion of Health, England.

Delta Omega Lecture. HONORABLE PAUL MARTIN, Minister of National Health and Welfare, Canada.

Presidential Address. IRA V. HISCOCK, Sc.D.

Presentation of Sedgwick Memorial Medal.

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* Tickets will be on sale at the Registration Desk.

WEDNESDAY, 8:00 A.M.

* GRADUATES' ORGANIZATION, SCHOOL OF HYGIENE, UNIVERSITY OF TORONTO

Breakfast Session—Room 110, Ambassador Hotel

* THE JOHNS HOPKINS UNIVERSITY ALUMNI

Breakfast Session—Venetian Room, Ambassador Hotel

* MASSACHUSETTS INSTITUTE OF TECHNOLOGY ALUMNI

Breakfast Session—Ritz Room, Ritz-Carlton Hotel

* UNIVERSITY OF MICHIGAN ALUMNI

Breakfast Session—Carlton Room, Ritz-Carlton Hotel

WEDNESDAY, 9:45 A.M.

DENTAL HEALTH, FOOD AND NUTRITION, PUBLIC HEALTH EDUCATION, AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Room B, Convention Hall

Presiding: CATHERINE M. LEAMY.

SOCIAL AND CULTURAL SIGNIFICANCE OF FOOD

Panel Discussion

(Title of paper to be announced.) JOHN C. CASSELL, M.B., B.Ch.

Participants:
M. FRANCES FRAZIER, R.N.
RUTH L. HUENEMANN, D.Sc.
DAVID F. STRIFFLER, D.D.S.
MYRON E. WEGMAN, M.D.

ENGINEERING AND SANITATION SECTION

Third Session—Room F, Convention Hall

Presiding: EARLE W. SUDDERTH, Chairman.

Continuous Recording of Fluorides in Water. FRANZ J. MAIER AND ERVIN BELLACK.

(Cont.)

* Tickets will be on sale at the Registration Desk.

WEDNESDAY, 9:45 A.M.

ENGINEERING AND SANITATION SECTION, (Cont.)

A Radioisotope Technic for Rapid Detection of Coliform Organisms. GILBERT V. LEVIN; VENTON R. HARRISON; WALTER C. HESS; AND HARRY C. GURNEY.

Field Tests on Delayed Incubation Millipore Filter Technic for Coliforms in Water. PAUL W. KABLER, M.D.

Report of Committee on Vector Control. JOHN M. HENDERSON, C.E.

Report of Joint Committee on Milk Sanitation. KARL M. MASON.

EPIDEMIOLOGY SECTION

Second Session—Room E, Convention Hall

Presiding: ROBERT F. KORNS, M.D., Chairman.

Occupational Associations with Gastric Cancer. ARTHUR S. KRAUS; MORTON L. LEVIN, M.D.; AND PAUL R. GERHARDT, M.D.

Epidemiological Evidence on the Nature of Hodgkin's Disease. BRIAN MACMAHON, M.D.

Epidemiological Observations on an Outbreak of Asceptic Meningitis Due to ECHO Virus, Type VI. DAVID KARZON, M.D.; WARREN WINKELSTEIN, JR., M.D.; AND ALMEN L. BARRON, Ph.D.

Comparative Studies on Patterns of Family Infections with Poliomyelitis and Certain ECHO Viruses. WILLIAM MCD. HAMMON, M.D., AND E. H. LUDWIG, Ph.D.

Observations on Natural Poliovirus Infections in Immunized Children. JOHN P. FOX, M.D.; HENRY M. GELFAND, M.D.; AND DOROTHY R. LEBLANC, R.N.

LABORATORY SECTION

Third Session—Room A, Convention Hall

THE PUBLIC HEALTH LABORATORY IN THE COMMUNITY CONTROL OF CHRONIC DISEASES

The Public Health Laboratory in the Community Control of Heart Diseases. ROBERT W. BERLINER, M.D., AND WILLIAM H. STEWART, M.D.

Laboratory Problems and Procedures in the Diagnosis and Study of Streptococcal Infections. (Speaker to be announced.)

The Public Health Laboratory in the Community Control of Cancer— Panel Discussion.

Moderator: COLONEL DWIGHT M. KUHNS, MC, USA.

WEDNESDAY, 9:45 A.M.

MATERNAL AND CHILD HEALTH AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Room C, Convention Hall

Presiding: FRANKLIN M. FOOTE, M.D.

STUDIES OF CASE-FINDING METHODS IN SCHOOLS

The Massachusetts Vision Test—Its Present Status. PHILIP W. JOHNSTON, Ph.D., AND R. GERALD RICE, M.D.

Audiometric Testing of Hearing of School Children. II. An Eight-Year Longitudinal Study of Hearing Status of 1,726 Children, Including Prognostic Implications and Relationship to Academic Retardation. SAMUEL M. WISHIK, M.D.; ELIZABETH R. KRAMMN; AND ELVIRA KOCH, R.N.

A Study of Periodic School Medical Examinations. II. The Annual Increment of New "Defects." ALFRED YANKAUER, M.D., AND RUTH LAWRENCE, M.D.

Teacher Observation—A General Screening Procedure. WILLIAM C. SPRING, JR., M.D.

MEDICAL CARE SECTION

First Session—Room D, Convention Hall

Presiding: HENRY C. DANIELS.

A STUDY OF GENERAL PRACTICE IN NORTH CAROLINA

Quality of Medical Care: The Problem of Training the General Physician. OSLER L. PETERSON, M.D.; ROBERT S. SPAIN, M.D.; LEON P. ANDREWS, M.D.; AND BERNARD G. GREENBERG, M.D.

STATISTICS SECTION

First Session—Room 9, Convention Hall

Presiding: WILLIAM M. HAENSZEL, Chairman.

W. THURBER FALES LECTURE

The Eastern Health District Study of the Extent of Illness and Accidents. SELWYN D. COLLINS, Ph.D.

Section Business.

WEDNESDAY, 12:30 P.M.

* ASSOCIATION OF LABOR HEALTH ADMINISTRATORS

Luncheon and Afternoon Session—Surf Room, Ambassador Hotel

* ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH

Luncheon Session—Room 122, Ambassador Hotel

* DENTAL HEALTH SECTION

Luncheon Session—Room 125, Ambassador Hotel

Presiding: JOHN T. FULTON, D.D.S., Chairman.

Dental Practice in 1980. J. L. T. APPLETON, D.D.S.

* HEALTH OFFICERS SECTION

Luncheon Session—Ballroom, Ritz-Carlton Hotel

Presiding: DANIEL BERGSMA, M.D., Chairman.

The Future Health Officer's Responsibility. ALAN GREGG, M.D.

A discussion participation luncheon similar to those held in previous years. Copies of Dr. Gregg's paper will be distributed for advance reading to those making luncheon reservations. The subject will be discussed at the separate tables during luncheon and from the floor afterward. Dr. Gregg will be present to join in the discussion.

* MATERNAL AND CHILD HEALTH SECTION

Luncheon Session—Ocean Terrace, Ritz-Carlton Hotel

* MENTAL HEALTH SECTION

Luncheon Session—Carlton Room, Ritz-Carlton Hotel

Presiding: JOHN D. PORTERFIELD, M.D., Chairman.

Mental Hygiene and Public Health. BENZION LIBER, M.D.

Report of Section Council.

Perspectives of the Mental Health Section—Open Discussion.

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* Tickets will be on sale at the Registration Desk.

WEDNESDAY, 12:30 P.M.

* NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Luncheon Session—Renaissance Room, Ambassador Hotel

Presiding: JAMES E. PERKINS, M.D., President-Elect.

Report on the Ninth World Health Assembly. LEONARD A. SCHEELE, M.D.

(Address to be announced.)

Everyone Invited

This session preceded by a meeting of the Policy Committee and Members in Room 118, Ambassador Hotel, 9:45 A.M. Presiding, THOMAS PARRAN, M.D., President.

* OCCUPATIONAL HEALTH SECTION

Luncheon Session—Room 105, Ambassador Hotel

* PUBLIC HEALTH EDUCATION SECTION

Luncheon Session—Palm Court, Ritz-Carlton Hotel

Presiding: ROBERT O. YOHO.

The Rome Conference of the International Union for Health Education of the Public. CLAIR E. TURNER, Dr.P.H.

WEDNESDAY, 2:30 P.M.

AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

First Session—Room E, Convention Hall

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* Tickets will be on sale at the Registration Desk.

WEDNESDAY, 2:30 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Second Session—Rooms 1, 9, and 10, Convention Hall

Room 1—School Health Nurses Section.

Presiding: ANNETTE L. EVELETH, R.N.

APPROACHES TO SCHOOL HEALTH

Cooperation of the Nurse and Teacher in the Health Program in Small Communities. MARY B. RAPPAPORT, R.N.

Approaches in Developing Dental Services in Small Communities. FRANCIS LIVINGSTON, D.D.S.

Room 9—School Health Services Section.

PROBLEMS, SOLUTIONS, IDEAS

Presiding: CLAIRE A. CHRISTMAN, M.D.

Problems, Solutions, Ideas—As Viewed by the Board of Education. ELIZABETH P. CAMPBELL.

A Private Physician Looks at School Health Services. RUTH M. WHITE, M.D.

Nurse Aides in Secondary Schools—Panel Discussion.

Moderator: WILLIAM A. PARKER.

School Nurse Supervisor. MARGARET A. BAUER, R.N.
Supervisor of Health Education. MARY A. THOMPSON.
Parent. ELIZABETH P. CAMPBELL.
Principal. WILLIAM W. HAZLETT.

Psychiatry Helps Personnel to Help Children. WILLIAM F. STARK, M.D.

Room 10—School Health Education Section.

Presiding: DORA A. HICKS, Ed.D.

VISUALIZING HEALTH EDUCATION

The Flannel Board Demonstrating Nutrition Education for Second Grade Pupils. JULIA M. PRATT.

Health Education for Secondary School Pupils. WILLIAM H. CRESWELL, JR.

The Student Health Service Exhibit Demonstrating Health Education for All University Students. STELLA KAZMIERCZAK, R.N.

The Model Classroom Demonstrating Environmental Control Procedures for Prospective Teachers. FERN SMITH.

WEDNESDAY, 2:30 P.M.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

Second Session—Room A, Convention Hall

Presiding: WILLIAM R. PEEBLES.

Changing Patterns in Public Health. VLADO A. GETTING, M.D.

More Hands for Tomorrow's Health. NORVIN C. KIEFER, M.D.

Management Problems Facing a Chief Executive in a Changing Society. RAYMOND F. MALE.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

First Session—Room 15, Convention Hall

Presiding: BENN J. LELAND, Chairman.

Committee Reports:

Professional Development. ERIC W. MOOD.

Scope of Environmental Health Services by Local Health Departments. HERBERT J. DUNSMORE.

Administration of Housing Programs. LEONARD J. CZARNIECKI.

National Sanitation Foundation Equipment Standards. MORTON S. HILBERT, C.E.

Salaries. WALTER A. LYON.

Membership. NORMAN M. WINCH.

Administration of Air Pollution Control Programs in the United States. PAUL W. PURDOM.

Reports of Special Representatives of Conference to Other Organizations:

National Health Council. PAUL W. PURDOM.

Public Health Advisory Committee to the Chlorine Institute. TERENCE K. MCCORMACK.

National Citizens Committee for the World Health Organization. SOL PINCUS, C.E.

CONFERENCE OF NURSE DIRECTORS

First Session—Room 16, Convention Hall

WEDNESDAY, 2:30 P.M.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

First Session—Room 17, Convention Hall

Presiding: ERNEST J. WITTE, V.M.D.

The Veterinarian's Responsibility in Food Inspection. A. R. MILLER.

Epidemiology of Disease Outbreaks Attributed to Foods of Animal Origin. LEONARD M. SHUMAN, M.D.

POULTRY INSPECTION—A NATIONAL ISSUE

A Discussion of the Need for Compulsory Poultry Inspection

Moderator: SENATOR JAMES E. MURRAY.

Viewpoints:

Labor. SHIRLEY W. BARKER.
Consumer. MRS. A. M. SATTERLEE.
Industry. (Speaker to be announced.)
Research. (Speaker to be announced.)
Food and Drug Officials. DANIEL SCHLOSSER, D.V.M.
U. S. Department of Agriculture. ROY E. WILLIE, D.V.M.
Livestock Sanitary Officials. RALPH A. HENDERSHOTT, D.V.M.
Federal Public Health Officials. JOE W. ATKINSON, D.V.M.
State Public Health Officials. OSCAR SUSSMAN, D.V.M.
Municipal Public Health Officials. ABRAHAM E. ABRAHAMSON.

Session Open to All Delegates

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Room F, Convention Hall

A Milk-Borne Outbreak of Salmonellosis Due to S. paratyphi B. WILLIAM D. SCHRACK, JR., M.D.; CLEON J. GENTZKOW, M.D.; OSCAR DAVIS, M.D.; AND HORACE M. GEZON, M.D.

A State-Wide Outbreak of Salmonellosis Due to S. blockley Disseminated by Chicken Salad. JOHN MCCROAN, M.D., AND ALICE BRIM.

Food Poisoning Outbreaks Associated with Spray-Dried Milk. ROLANDO ARMIJO, M.D.; RAFAEL A. TIMOTHEE, M.D.; AND DONALD A. HENDERSON, M.D.

Copper Poisoning at a Cocktail Party. JOHN WYLLIE, M.D.

Ecology of Histoplasma and Other Pathogenic Fungi. CHESTER W. EMMONS, Ph.D.

Should the Premarital Blood Test Be Compulsory? DANIEL WIDELOCK, Ph.D.; WILLIAM LEVIN, DR.P.H.; HOWARD L. BODILY, Ph.D.; AND HAROLD J. MAGNUSON, M.D.

WEDNESDAY, 2:30 P.M.

GOVERNING COUNCIL
AMERICAN PUBLIC HEALTH ASSOCIATION

Second Meeting—Venetian Room, Ambassador Hotel

MEDICAL CARE SECTION

Second Session—Room B, Convention Hall

Presiding: Henry B. Makover, M.D.

THE ROLE OF THE OUTPATIENT DEPARTMENT

A Fresh Look at Outpatient Department Problems. Sidney S. Lee, M.D.

Clinic Patients' Expectations of Medical Care. Lois Pratt, Ph.D.; George G. Reader, M.D.; and Margaret Mudd.

Participants:

Henry J. Bakst, M.D.
James P. Dixon, M.D.
Frank F. Furstenberg, M.D.
E. Michael White, LL.B.

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Forum Session—Renaissance Room, Ambassador Hotel

WORLD HEALTH GOALS

In Professional Education and Training.
In Epidemic Control Centers and Services.
In Nutrition.
In Public Health Nursing Services.
In Health Education of the Public.
In Mental Health Services.
In Malaria Eradication—First Year's Progress.
In Radiation and Human Health.

Four or five of the above topics will be discussed, depending on the fresh field experience that can be brought to bear upon them. Moderator and participants are purposely unselected at this time.

Everyone Invited

WEDNESDAY, 2:30 P.M.

PUBLIC HEALTH CANCER ASSOCIATION

First Session—Room D, Convention Hall

THE PLACE OF THE SPECIALIZED HOSPITAL IN THE CANCER PICTURE

Panel Discussion

Moderator: JOHN R. HELLER, JR., M.D.

Participants:

R. L. CLARK, JR.
ERNEST M. DALAND.
ISADOR LAMPE.
LYNDON E. LEE, JR., M.D.
C. W. MEINERSHAGEN.
C. P. RHOADS.

STATISTICS SECTION AND THE AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

Joint Session—Room C, Convention Hall

Presiding: WILLIAM H. VEIGEL.

USES AND LIMITATIONS OF THE HOUSEHOLD INTERVIEW SURVEY FOR STUDY OF THE EPIDEMIOLOGY OF CHRONIC DISEASES

Measurement of Prevalence of Chronic Disease by Household Interviews and Clinical Examinations. DEAN E. KRUEGER.

Household Survey, Individual Interview and Clinical Examinations to Determine Prevalence of Heart Disease. DONOVAN J. THOMPSON, Ph.D.

Advantages and Limitations of Survey Interviewing in Studies of Chronic Disease. JACK ELINSON, Ph.D., AND RAY E. TRUSSELL, M.D.

Uses and Limitations of the California Health Survey for Studying Epidemiology of Chronic Disease. LESTER BRESLOW, M.D.

Discussant: THEODORE D. WOOLSEY.

WEDNESDAY, 5:30 P.M.

COUNCIL OF CONSULTANTS OF THE NATIONAL SANITATION FOUNDATION

Social Hour, Followed by Dinner at 6:30 P.M., Room 118, Ambassador Hotel

WEDNESDAY, 5:30 P.M.

* FOOD AND NUTRITION SECTION

Social Hour, 5:30–7:00 P.M., Room 105, Ambassador Hotel

* HARVARD PUBLIC HEALTH ALUMNI ASSOCIATION

Social Hour, Followed by Dinner at 6:30 P.M., Marine Hall Dining Room, Hackney's Restaurant, Main Avenue and Boardwalk

* PUBLIC HEALTH EDUCATION SECTION

Social Hour, 5:30–7:00 P.M., 22 Club, Ambassador Hotel

* UNIVERSITY OF MINNESOTA

Social Hour, Followed by Dinner at 6:30 P.M., Carlton Room, Ritz-Carlton Hotel

* UNIVERSITY OF NORTH CAROLINA ALUMNI

Social Hour, 5:30–7:00 P.M., Ocean Terrace, Ritz-Carlton Hotel

WEDNESDAY, 6:30 P.M.

* AMERICAN SCHOOL HEALTH ASSOCIATION

Dinner and Evening Session—Park Lounge, Claridge Hotel

Presiding: I. P. BARRETT, M.D., President.

Before It's Too Late. (Superintendent's Committee for Handling Potentially Dangerous Children). LOUIS P. HOYER, LL.D.

Presentation of the William A. Howe Award to William E. Ayling, M.D.

Response by Dr. Ayling.

Installation of Officers.

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* Tickets will be on sale at the Registration Desk.

WEDNESDAY, 6:30 P.M.

* CONFERENCE OF PUBLIC HEALTH VETERINARIANS

Dinner and Evening Session—Surf Room, Ambassador Hotel

Presiding: RAYMOND J. HELVIG, D.V.M.

You Are There—Russia 1956. Observations on Epidemiological and Associated Medical Problems. RICHARD E. SHOPE, M.D.

Business Meeting. (For conference members only.)

Dinner Session Open to All Delegates

* PUBLIC HEALTH CANCER ASSOCIATION

Dinner Session—Room 110, Ambassador Hotel

* UNIVERSITY OF PITTSBURGH ALUMNI

Dinner Session—Green Room, Ritz-Carlton Hotel

WEDNESDAY, 8:00 P.M.

AMERICAN COLLEGE OF PREVENTIVE MEDICINE

First Session—Ballroom, Ritz-Carlton Hotel

MEDICAL CARE SECTION

Third Session—Venetian Room, Ambassador Hotel

Presiding: FREDERICK H. MOTT, M.D., Chairman.

AN EVENING WITH MICHAEL DAVIS

THURSDAY, 8:00 A.M.

* COMMISSIONED OFFICERS ASSOCIATION OF THE U. S. PUBLIC HEALTH SERVICE

Breakfast Session—Carlton Room, Ritz-Carlton Hotel

Open to all U. S. Public Health Service Officers.

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* Tickets will be on sale at the Registration Desk.

THURSDAY, 8:00 A.M.

* GEORGE PEABODY COLLEGE FOR TEACHERS ALUMNI

Breakfast Session—Room 105, Ambassador Hotel

* YALE UNIVERSITY ALUMNI

Breakfast Session—Venetian Room, Ambassador Hotel

THURSDAY, 9:45 A.M.

AMERICAN COLLEGE OF PREVENTIVE MEDICINE

Second Session—Room A, Convention Hall

AMERICAN SCHOOL HEALTH ASSOCIATION

Third Session—Room B, Convention Hall

Presiding: FRED V. HEIN, Ph.D.

Activities of the Mental Health Committee. JENNELLE V. MOORHEAD.

A Mental Health Workshop for Teachers. HARRIETT B. RANDALL, M.D.

Interviews:
Teacher. (Speaker to be announced.)
Parent. SYLVIA HEARL.
Counselor. HELEN F. FAUST.

Discussion.

The Massachusetts Program. LIBBIE B. BOWER, M.D.

The New York City School Health Survey. IRVING LADIMER, J.D.

Nutrition of School-Age Children. PAULINE BEERY MACK, Ph.D.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

Third Session—Room F, Convention Hall

Presiding: EARL O. WRIGHT.

Application of Management Analysis and Reporting Technics in the Planning, Financing, and Direction of Local Health Services. RALPH R. SACHS, M.D., AND C. RICHARD KAY.

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* Tickets will be on sale at the Registration Desk.

THURSDAY, 9:45 A.M.

ASSOCIATION OF RESERVE OFFICERS OF THE U. S. PUBLIC HEALTH SERVICE

First Session—Room 1, Convention Hall

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Second Session—Room 15, Convention Hall

Presiding: HENRY E. DRUMWRIGHT.

COPING WITH SUBURBAN SEWAGE DISPOSAL PROBLEMS

Panel Discussion

Moderator: BENN J. LELAND.

Participants:

MORTON S. HILBERT, C.E.
H. CLIFFORD MITCHELL.
PAUL W. RICHARDS.
JOSEPH A. SALVATO, JR.
EDWARD L. STOCKTON.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

Second Session—Room 10, Convention Hall

Presiding: DANIEL COHEN.

Relationship of Cytopathic, Enteric and Respiratory Viruses of Animals to Human Health. CALVIN KUNIN, M.D.

Toxoplasmosis—Interrelationships of Swine, Dog, and Human Infections. LEON JACOBS, Ph.D.

Psittacosis in Poultry as a Public Health Problem. HAROLD M. ERICKSON, M.D.

Business Meeting.

Scientific Session Open to All Delegates

DENTAL HEALTH AND SCHOOL HEALTH SECTIONS

Joint Session—Room C, Convention Hall

Presiding: JOHN T. FULTON, D.D.S.

(Cont.)

THURSDAY, 9:45 A.M.

DENTAL HEALTH AND SCHOOL HEALTH SECTIONS, (Cont.)

NEW DEVELOPMENTS IN WATER FLUORIDATION

Current Status of the Grand Rapids Fluoridation Project. FRANCIS A. ARNOLD, JR., D.D.S.

Posteruptive Effects of Fluorides. RICHARD L. HAYES, D.D.S.

Recent Studies on the Excretion of Fluorides. ISADORE ZIPKIN, Ph.D.

Effect of Fluorides on Periodontal Health. A. L. RUSSELL, D.D.S.

EPIDEMIOLOGY AND MENTAL HEALTH SECTIONS, AND THE NATIONAL CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Room 20, Convention Hall

Presiding: ROBERT F. KORNS, M.D.

EPIDEMIOLOGICAL STUDIES ON MENTAL ILLNESS

A Survey of Mental Disease in an Urban Population. BENJAMIN PASAMANICK, M.D.; DEAN WINN ROBERTS, M.D.; PAUL V. LEMKAU, M.D.; AND DEAN E. KRUEGER.

A Methodological Approach to the Epidemiology of Reading Disabilities and Some Early Findings. ALAN D. MILLER, M.D.; JOSEPH B. MARGOLIN, Ph.D.; AND STANLEY F. YOLLES, M.D.

Problems of Prevalence and Incidence in Studies of Mental Disease. MORTON KRAMER, D.Sc.

FOOD AND NUTRITION SECTION

Third Session—Room 17, Convention Hall

Presiding: ROBERT E. OLSON, M.D.

ROLE OF DIETARY FAT IN HUMAN NUTRITION

Role of Unsaturated Dietary Fat in Infant Nutrition. ARILD HANSEN, M.D.

Role of Unsaturated Dietary Fat in Adult Nutrition. J. M. R. BEVERIDGE, M.D.

Epidemiological Evidence Relating to the Effect of Dietary Fat upon Health in Man. FRANCISCO GRANDE, M.D.

Experimental and Clinical Evidence Relating to the Effect of Dietary Fat upon Health in Man. THEODORE VAN ITALLIE, M.D.

Summarizer: ROBERT E. OLSON, M.D.

THURSDAY, 9:45 A.M.

LABORATORY SECTION, THE CONFERENCE OF DIRECTORS OF PUBLIC HEALTH LABORATORIES, AND THE INTER-SOCIETY COMMITTEE ON LABORATORY PROBLEMS RELATED TO HEALTH

Joint Session—Room D, Convention Hall

THE CHANGING ROLE OF THE SCIENTISTS AND TECHNOLOGISTS

Panel Discussion

In Medicine.

In the Public Health Laboratory.

In the Medical Laboratory.

APPROACHES TO THE CERTIFICATION OR LICENSURE OF SCIENTISTS AND TECHNOLOGISTS

Panel Discussion

By the American Chemical Society.

By the Society of American Bacteriologists.

By the American Society of Medical Technologists.

By California.

MATERNAL AND CHILD HEALTH AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Room E, Convention Hall

Presiding: MARION I. MURPHY, R.N.

Comprehensive Maternity Care. SAMUEL B. KIRKWOOD, M.D.

Psychological Aspects of Maternity Care. GERALD CAPLAN, M.D.

New Approaches to Work with Expectant Parent Groups—Report on a Leadership Training Program for Nurses. ALINE B. AUERBACH.

MEDICAL CARE SECTION

Fourth Session—Room 13, Convention Hall

Presiding: MILTON I. ROEMER, M.D.

Problems of Participation of the Family Physician in a Group Clinic. MURRAY B. HUNTER, M.D., AND JOHN H. SLOSS.

Physician's Views on the Level of Medical Information Among Patients. LOIS PRATT, Ph.D.; ARTHUR SELIGMAN, M.D.; AND GEORGE G. READER, M.D.

Major Medical Expense Insurance: An Evaluation. JEROME POLLACK.

THURSDAY, 9:45 A.M.

NURSE MENTAL HEALTH CONSULTANTS

Room 21, Convention Hall

PUBLIC HEALTH CANCER ASSOCIATION

Second Session—Room 9, Convention Hall

THE PLACE OF THE AMERICAN CANCER SOCIETY IN THE CANCER PROGRAM

Panel Discussion

Moderator: IAN MACDONALD.

Participants:
CHARLES S. CAMERON, M.D.
CLARENCE L. SCAMMAN, M.D.
DOUGLAS SPRUNT, M.D.
HARRY M. WEAVER, Ph.D.

Cancer Incidence, Probability and Mortality in the State of New York.
PAUL R. GERHARDT, M.D., AND VINCENT H. HANDY, M.D.

THURSDAY, 12:30 P.M.

* CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Luncheon Session—Room 110, Ambassador Hotel

Presiding: BENN J. LELAND, Chairman.

Business Meeting.

Report of the Secretary-Treasurer. H. CLIFFORD MITCHELL.

Report of the News Editor. TOM S. GABLE.

Report of the Eligibility Committee. PAUL W. PURDOM.

Presentation of Past Chairman's Certificate to Guy M. Tate, Jr.

Election of Officers.

* DIVISION OF INTERNATIONAL HEALTH, U. S. PUBLIC HEALTH SERVICE

Luncheon Session—Venetian Room, Ambassador Hotel

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* Tickets will be on sale at the Registration Desk.

THURSDAY, 12:30 P.M.

* LABORATORY SECTION

Luncheon and Afternoon Session—Surf Room, Ambassador Hotel

* MEDICAL CARE SECTION

Luncheon Session—Ocean Terrace, Ritz-Carlton Hotel

Presiding: FREDERICK D. MOTT, M.D., Chairman.

Section Business.

* STATE SANITARY ENGINEERS

Luncheon Session—Room 106, Ambassador Hotel

* STATISTICS SECTION

Luncheon Session—Room 125, Ambassador Hotel

* UNIVERSITY OF CALIFORNIA PUBLIC HEALTH ALUMNI ASSOCIATION

Luncheon Session—Green Room, Ritz-Carlton Hotel

THURSDAY, 2:30 P.M.

DENTAL HEALTH SECTION

Third Session—Room 9, Convention Hall

Presiding: JOHN T. FULTON, D.D.S., Chairman.

DENTAL PROBLEMS OF THE CHRONICALLY ILL

Definition of the Dental Problems of the Chronically Ill on a State-Wide Basis. DAVID R. WALLACE, D.D.S.

Determination of Standards of Dental Service for the Chronically Ill. ROBERT E. CROWLEY, D.D.S.

Preparing Dental Students for the Treatment of Patients Experiencing Chronic Disease. KENNETH A. EASLICK, D.D.S.

Organization of Community-Wide Dental Services for the Homebound and Institutionalized. J. M. WISAN, D.D.S.

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* Tickets will be on sale at the Registration Desk.

THURSDAY, 2:30 P.M.

ENGINEERING AND SANITATION SECTION AND THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Joint Session—Room A, Convention Hall

Presiding: EARLE W. SUDDERTH.

All Washed Up. W. W. BAUER, M.D.

Industrial Control of Dairy Products and Its Relation to the Activities of Public Health Agencies. A. C. FAY, Ph.D.

Demonstration of the Procedure for Testing Dishwashing Machines by the National Sanitation Foundation Testing Laboratory, Inc. WALTER D. TIEDEMAN; CHARLES A. FARISH; AND JACK E. MCALLISTER.

ENGINEERING AND SANITATION, HEALTH OFFICERS, OCCUPATIONAL HEALTH, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Room B, Convention Hall

Presiding: DANIEL BERGSMA, M.D.

APPROACHES TO ACCIDENT PREVENTION

Safety and Health. NED H. DEARBORN, Ph.D.

Public Health's Unmet Needs in Home and Farm Safety. CHARLES M. CAMERON, M.D.

Improving the Behavior of Drivers. HERBERT J. STACK, Ph.D.

Role of Preventive Medicine in Highway Safety. ROSS A. MCFARLAND, Ph.D.

Relationship of Unsafe Driving Habits to Highway Injuries: Report of a Study. JEAN K. BOEK, Ph.D.

EPIDEMIOLOGY, FOOD AND NUTRITION, AND STATISTICS SECTIONS

Joint Session—Room D, Convention Hall

MEASURING THE RISK OF CORONARY HEART DISEASE IN ADULT POPULATION GROUPS

The Cardiologist Enlists the Epidemiologist. PAUL DUDLEY WHITE, M.D.

(Cont.)

THURSDAY, 2:30 P.M.

EPIDEMIOLOGY, FOOD AND NUTRITION, AND STATISTICS SECTIONS. (Cont.)

Observations on the Development of Coronary Heart Disease in the Framingham Population. THOMAS R. DAWBER, M.D., AND FELIX E. MOORE.

A Prospective Epidemiological Study of Coronary Artery Disease in New York. ROBERT F. KORNS, M.D.; A. SANDRA HESLIN; JOSEPH T. DOYLE, M.D.; AND HERMAN E. HILLEBOE, M.D.

The Clinical Status of an Adult Population Group in Los Angeles Under Observation for Two to Three Years. JOHN M. CHAPMAN, M.D.; LENOR S. GOERKE, M.D.; EDWARD PHILLIPS; WILFRED J. DIXON; AND DONALD LOVELAND.

An Epidemiological Investigation of Coronary Heart Disease in California Health Survey Population. ROBERT M. DRAKE, M.D.; ROBERT BUECHLEY; AND LESTER BRESLOW, M.D.

Discussants:

Implications to the Biostatistician. ANTONIO CIOCCO, D.Sc.

Implications to the Nutritionist. NEVIN S. SCRIMSHAW, M.D.

Summarizer: JAMES WATT, M.D.

LABORATORY SECTION

Fourth Session—Room 105 and 22 Club, Ambassador Hotel

SANITARY BACTERIOLOGY

2:30 P.M., Room 105—Dairy Products

The Pasteurization of Milk Containing the Organism of Q Fever. JOHN B. ENRIGHT, Ph.D.; WALTER W. SADLER, D.V.M.; AND ROBERT C. THOMAS.

Cryoscopy of Milk, a 1954–1956 Survey. ARCHIE H. ROBERTSON, Ph.D.

The Application of the Soluble Swab to Microbiological Testing of Paper and Paper Products. RICHARD D. O'NEILL, Ph.D., AND ERNEST REED.

Significant Factors in Germicide Tests. CECIL W. CHAMBERS.

Numbers and Types of Enterococci and Coliforms in Feces, Water, and Sewage. MARY L. SULLIVAN; CLARA H. BARTLEY; AND LAWRENCE W. SLANETZ, Ph.D.

Developments in the Use of the Millipore Filter. (Speaker to be announced.)

(Cont.)

THURSDAY, 2:30 P.M.

LABORATORY SECTION, (Cont.)

2:30 P.M., 22 Club—Water and Air

Recent Developments in the Sampling of Air. HEBER J. R. STEVENSON, SR.

Storage of Water Samples for Bacteriological Examination. JOSEPH A. MCCARTHY, AND HAROLD A. THOMAS, JR., S.D.

4:00 P.M., 22 Club—Combined Session

THE APPLICATION OF THE MEMBRANE FILTER IN THE EXAMINATION OF WATER

Panel Discussion

Moderator: F. WELLINGTON GILCREAS.

Participants:

SAMUEL R. DAMON, Ph.D.
PAUL W. KABLER, M.D.
RALPH E. NOBLE.
WALLACE R. SANDERSON.

MATERNAL AND CHILD HEALTH AND MEDICAL CARE SECTIONS

Joint Session—Room C, Convention Hall

CRIPPLED CHILDREN'S SERVICES—A PUBLIC HEALTH MEDICAL CARE PROGRAM

Panel Discussion

Administrative Aspects of Crippled Children's Programs. ARTHUR J. LESSER, M.D.

Moderator: MILTON TERRIS, M.D.

Participants:

EDWIN F. DAILY, M.D.
FRANZ GOLDMANN, M.D.
HERBERT R. KOBES, M.D.
LENDON SNEDEKER, M.D.
ALONZO S. YERBY, M.D.

THURSDAY, 2:30 P.M.

MENTAL HEALTH AND PUBLIC HEALTH NURSING SECTIONS, AND THE COMMITTEE ON PUBLIC HEALTH OF THE AMERICAN PSYCHIATRIC ASSOCIATION

Joint Session—Room F, Convention Hall

Presiding: ROGER W. HOWELL, M.D., AND MORTON KRAMER, D.Sc.

ROUND TABLE ON PUBLIC HEALTH PROBLEMS ARISING FROM THE WIDESPREAD USE OF THE TRANQUILIZING DRUGS

An Over-All View of the Problem. MORTON KRAMER, D.Sc.

The Mental Hospital. HENRY BRILL, M.D., AND ROBERT E. PATTON.

Psychiatric Services in General Hospitals and Outpatient Psychiatric Clinics. JEROME D. FRANK, M.D.

Follow-Up of Discharged Patients. MILDRED KINGCADE, R.N.

Medical Care Programs. V. L. ELLICOTT, M.D.

Problems in Evaluating Psychiatric Drugs Prior to Their Release for General Use. JONATHAN O. COLE, M.D.

Summarizer: ROGER W. HOWELL, M.D.

PUBLIC HEALTH EDUCATION SECTION

Second Session—Room E, Convention Hall

Presiding: ROBERT O. YOHO.

Section Business and Committee Reports.

THURSDAY, 5:30 P.M.

* LABORATORY SECTION

Social Hour, 5:30–7:00 P.M., Carlton Room, Ritz-Carlton Hotel

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* Tickets will be on sale at the Registration Desk.

THURSDAY, 8:30 P.M.

SECOND GENERAL SESSION

Renaissance Room, Ambassador Hotel

Presiding: IRA V. HISCOCK, Sc.D., President, American Public Health Association.

Address: ALAN GREGG, M.D.

Presentation of the Lasker Awards of the American Public Health Association for 1956.

Announcement of New Officers, Resolutions.

Dancing (informal) will follow in the Venetian Room, Ambassador Hotel.

All Registered Delegates and Exhibitors Are Invited

FRIDAY, 9:45 A.M.

DENTAL HEALTH SECTION

Fourth Session—Room 1, Convention Hall

Presiding: JOHN T. FULTON, D.D.S., Chairman.

THE DENTIST AND REHABILITATION

Objectives and Function of Federal and State Rehabilitation Programs. SAMUEL S. HERMAN, D.D.S.

Services Which the Practicing Dentist Can Render in a General Rehabilitation Program. M. MICHAEL COHEN, D.M.D.

Research Needs in Oral Rehabilitation. SAMUEL PRUZANSKY, D.D.S.

ENGINEERING AND SANITATION, LABORATORY, AND OCCUPATIONAL HEALTH SECTIONS

Joint Session—Room 13, Convention Hall

THE DETECTION AND CONTROL OF RADIOLOGICAL HAZARDS

Administrative Aspects of the Development of Peacetime Use of Nuclear Power. H. L. PRICE.

Medical Aspects of the Control of Radiological Health Problems. CLINTON C. POWELL, M.D.

(Cont.)

FRIDAY, 9:45 A.M.

ENGINEERING AND SANITATION, LABORATORY, AND OCCUPATIONAL HEALTH SECTIONS, (Cont.)

Engineering Aspects of the Disposal of Radioactive Wastes from the Peacetime Applications of Nuclear Technology. JOSEPH A. LIEBERMAN, Dr.Eng.

Selection, Care and Calibration of Instruments for Field and Laboratory Measurements of Radiation. D. E. VAN FAROWE.

Analysis of Radioactivity in Surface Waters: Practical Laboratory Methods. LLOYD R. SETTER; G. R. HAGEE; AND C. P. STRAUB.

Laboratory Methods for Determining the Adsorption of Radioactive Materials by Soil and Sediment. BERND KAHN.

EPIDEMIOLOGY AND STATISTICS SECTIONS

Joint Session—Room 9, Convention Hall

Presiding: WILLIAM M. HAENSZEL AND ROBERT F. KORNS, M.D.

A SYMPOSIUM ON CONTROLLED VACCINE FIELD TRIALS

Japanese B Encephalitis. COLONEL W. D. TIGERTT, MC.

Poliomyelitis. THOMAS FRANCIS, JR., M.D.

Typhoid. BRANKO CVJETANOVIC, M.D.

Pertussis. W. CHARLES COCKBURN, M.B.

Influenza. ROBERT N. PHILIP, M.D.; JOSEPH A. BELL, M.D.; DORLAND J. DAVIS, M.D.; KENNETH K. TAKEMOTO, Ph.D.; JOSEPH I. ENGLER, M.D.; AND GILBERT W. MELLIN, M.D.

Discussant: PAUL MEIER, Ph.D.

FRIDAY, 9:45 A.M.

HEALTH OFFICERS AND MEDICAL CARE SECTIONS

Joint Session—Room 21, Convention Hall

CHRONIC DISEASE AND REHABILITATION

Panel Discussion

Patterns of Service Provided by Full-Time Local Health Departments in the Chronic Disease Field—Results of a Survey. JONAS N. MULLER, M.D.

Participants:
ARTHUR G. BAKER, M.D.
HAROLD D. CHOPE, M.D.
HERMAN E. HILLEBOE, M.D.
GEORGE JAMES, M.D.
BERWYN F. MATTISON, M.D.

FRIDAY, 9:45 A.M.

MATERNAL AND CHILD HEALTH, MENTAL HEALTH, AND PUBLIC HEALTH NURSING SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Room 20, Convention Hall

Presiding: Hilda Knobloch, M.D.

MENTAL DEFICIENCY

Etiologic Factors in Mental Retardation. George Jervis, M.D.

The Use of Social and Psychological Criteria for Determining the Incidence and Degree of Mental Retardation. Joseph F. Jastak, Ph.D.

Maternal Health and Mongolism; A Retrospective Appraisal. Theodore H. Ingalls, M.D.; Joan G. Babbott, M.D.; and Frank R. Philbrook, M.D.

Real Problems in the Development of Community Programs for the Medical Care and Education of Mentally Retarded Children. Warren T. Vaughan, Jr., M.D.

PUBLIC HEALTH EDUCATION SECTION

Third Session—Room 10, Convention Hall

Presiding: Robert O. Yoho.

Continuation of Section Business and Committee Reports.

SCHOOL HEALTH SECTION

Third Session—Room 15, Convention Hall

Presiding: Edward B. Johns, Ed.D.

EVALUATION IN SCHOOL HEALTH

Moderator: Wesley P. Cushman, Ed.D.

The Team Approach to the Nurses' Role in the School Health Program. Florence L. Fogle, R.N.

Progress Report, School Health Education Evaluative Study, Los Angeles Area. Edward B. Johns, Ed.D.

(Cont.)

FRIDAY, 9:45 A.M.

SCHOOL HEALTH SECTION, (Cont.)

Evaluation of the School Health Instruction Program. JOHN H. SHAW, Ed.D.

What Can Be Done to Promote Evaluation Studies in School Health?—Discussion.

Report of Committee on Hearing Conservation. C. ADELE BROWN, M.D., Chairman.

School Health Services in Rural Areas—Panel Discussion.

Moderator: MARIAN V. HAMBURG, Ed.D.

Vision and Hearing Screening Program in Prince George's County. MARY A. THOMPSON.

Visual Aids for Health in Tennessee. MARY T. PEACOCK.

Health Coordination in Broome County, N. Y. GORDON ANDERSON.

FRIDAY, 12:30 P.M.

MEETING OF ALL SECTION COUNCILS WITH THE EDITORIAL BOARD

Luncheon Session—Surf Room, Ambassador Hotel

Past and Present Section Secretaries Are Invited.

FRIDAY, 2:30 P.M.

ASSOCIATION SYMPOSIUM
HOW ARE WE DOING IN PUBLIC HEALTH?

Part II—Renaissance Room, Ambassador Hotel

Part I of the Symposium will be presented on Monday morning in the form of a debate, "Resolved: that the practice of public health is in tune with the times."

Now in Part II of the Symposium a reactor panel will relate issues raised by the debate to local situations, carry forward unanswered questions, and propose "how-to" methods.

MEETINGS OF THE SECTION COUNCILS

Some of the Sections have scheduled meetings of their Councils at announced hours and in announced places. Others will depend upon getting their Councils together on an informal basis whenever the opportunity presents itself.

Scheduled Section Council meetings are as follows:

Food and Nutrition:	Monday, 7:30 P.M., Room 115, Ambassador Hotel.
	Wednesday, 12:30 P.M., Room 103, Ambassador Hotel.
Mental Health:	Tuesday, 11:30 A.M., Room 21, Convention Hall (at close of second session).
Public Health Education:	Monday, 8:00 A.M., Breakfast, Room 120, Ambassador Hotel.
	Thursday, 5:00 P.M., Room 120, Ambassador Hotel.
School Health:	Tuesday, 4:30 P.M., Room 15, Convention Hall (at close of second session).
	Thursday, 4:30 P.M., Room B, Convention Hall (at close of joint session).

NOMINATIONS FOR SECTION OFFICES

Following are lists of nominations for certain Sections that were submitted by the Section Nominating Committees in time for publication in the September Journal. All nominees are Fellows of the respective Sections as required in the Constitution and By-Laws of the Association. The terms of office are for one year unless otherwise stated.

The By-Laws provide that "if the name of any Fellow be transmitted to the Section Committee on Nominations over the signature of ten Fellows or members of the Section prior to the first meeting of the Section, the Section Committee on Nominations shall add the name of such Fellow to its own list of nominees." Fellows and members who wish to add names by petition should communicate with the Section Secretary whose name and address are also shown.

DENTAL HEALTH SECTION NOMINATIONS

Chairman:	Robert A. Downs, D.D.S., Denver, Colo.
Vice-Chairman:	John E. Chrietzberg, D.D.S., Atlanta, Ga.
Secretary:	Donald J. Galagan, D.D.S., Washington, D. C.
Member of Section Council, 5-year term:	John T. Fulton, D.D.S., Washington, D. C.
Member of Association Nominating Committee for Elective Councilors:	Thomas L. Hagan, D.D.S., Washington, D. C.
Member of Association Standing Committee on Eligibility, 2-year term:	J. M. Wisan, D.D.S., Philadelphia, Pa.

(The present Section Secretary is Donald J. Galagan, D.D.S., Public Health Service, Washington 25, D. C.)

ENGINEERING AND SANITATION SECTION NOMINATIONS

Chairman:	Morton S. Hilbert, C.E., Dearborn, Mich.
Vice-Chairman:	Mark D. Hollis, C.E., Washington, D. C.
Secretary:	William C. Gibson, Ann Arbor, Mich.
Member of Section Council, 5-year term:	Jerome B. Trichter, New York, N. Y.
Member of Association Nominating Committee for Elective Councilors:	Earle W. Sudderth, Dallas, Tex.
Member of Association Standing Committee on Eligibility, 2-year term:	Clarence I. Sterling, Jr., Boston, Mass.

(The present Section Secretary is Clarence I. Sterling, Jr., 511A State House, Boston, Mass.)

FOOD NUTRITION SECTION NOMINATIONS

Chairman:	Robert E. Shank, M.D., Kirkwood, Mo.
Vice-Chairman:	Frederick C. Baselt, New York, N. Y.
Secretary:	Helen E. Walsh, Berkeley, Calif.
Member of Section Council, 5-year term:	Fredrick J. Stare, M.D., Boston, Mass.
Member of Association Nominating Committee for Elective Councilors:	Alice H. Smith, Lansing, Mich.
Member of Association Standing Committee on Eligibility, 2-year term:	John H. Browe, M.D., Troy, N. Y.

(The present Section Secretary is Helen E. Walsh, 2151 Berkeley Way, Berkeley 4, Calif.)

LABORATORY SECTION NOMINATIONS

Chairman:	Morris F. Shaffer, D.Phil., New Orleans, La.
Vice-Chairman:	Howard L. Bodily, Ph.D., Berkeley, Calif.
Secretary:	Albert V. Hardy, M.D., Jacksonville, Fla.
Member of Section Council, 5-year term:	Dwight M. Kuhns, M.D., Harlan, Ky.
Member of Association Nominating Committee for Elective Councilors:	J. V. Irons, Sc.D., Austin, Tex.
Member of Association Standing Committee on Eligibility, 2-year term:	Daniel Widelock, Ph.D., New York, N. Y.

(The present Section Secretary is Albert V. Hardy, M.D., P.O. Box 210, Jacksonville, Fla.)

MATERNAL AND CHILD HEALTH SECTION NOMINATIONS

Chairman:	Martha L. Clifford, M.D., Hartford, Conn. Harold Jacobziner, M.D., New York, N. Y. R. Gerald Rice, M.D., Belmont, Mass.
Vice-Chairman:	Herbert R. Kobes, M.D., Springfield, Ill. Arthur Lesser, M.D., Washington, D. C. Alfred Yankauer, M.D., Albany, N. Y.
Secretary:	Donald C. Smith, M.D., Ann Arbor, Mich. Helen M. Wallace, M.D., Minneapolis, Minn.
Member of Section Council, 5-year term:	Katherine Bain, M.D., Washington, D. C. Sidney S. Chipman, M.D., Chapel Hill, N. C. Samuel B. Kirkwood, M.D., Boston, Mass.
Member of Association Nominating Committee for Elective Councilors:	Alice D. Chenoweth-Pate, M.D., Arlington, Va. Goldie B. Corneliuson, M.D., Lansing, Mich. Edward Davens, M.D., Baltimore, Md. Georgia R. Perkins, M.D., Denver, Colo.

(The present Section Secretary is Alfred Yankauer, M.D., 39 Columbia St., Albany 7, N. Y.)

MEDICAL CARE SECTION NOMINATIONS

Chairman:	Milton I. Roemer, M.D., Regina, Sask., Canada.
Vice-Chairman:	Lucille M. Smith, Falls Church, Va.
Secretary:	Herbert Notkin, M.D., Syracuse, N. Y.
Member of Section Council, 5-year term:	Isidore S. Falk, Ph.D., Stonington, Conn.
Member of Association Nominating Committee for Elective Councilors:	Michael M. Davis, Ph.D., Chevy Chase, Md.
Member of Association Standing Committee on Eligibility, 2-year term:	Louis S. Reed, Ph.D., Washington, D. C.

(The present Section Secretary is Herbert Notkin, M.D., 318 North Clinton, Syracuse, N. Y.)

OCCUPATIONAL HEALTH SECTION NOMINATIONS

Chairman:	Robert H. Flinn, M.D., Washington, D. C.
Vice-Chairman:	Herbert T. Walworth, Chicago, Ill.
Secretary:	Lewis J. Cralley, Ph.D., Cincinnati, Ohio.
Member of Section Council, 5-year term:	Clyde M. Berry, Ph.D., Iowa City, Iowa.
Member of Association Nominating Committee for Elective Councilors:	Heinrich Brieger, M.D., Philadelphia, Pa.

(The present Section Secretary is Lewis J. Cralley, Ph.D., 1014 Broadway, Cincinnati 2, Ohio.)

PUBLIC HEALTH EDUCATION SECTION NOMINATIONS

Chairman:	Ben D. Kiningham, Jr., Springfield, Ill. Robert O. Yoho, Indianapolis, Ind.
Vice-Chairman:	Ralph H. Boatman, Jr., Ph.D., Chicago, Ill. Bernardine Cervinski, Bismarck, N. D.
Secretary:	Norma Johannis, Denver, Colo. Sara C. Stice, Louisville, Ky.
Member of Section Council, 5-year term:	Alfred E. Kesseler, Indianapolis, Ind. George Rosen, M.D., New York, N. Y.
Member of Association Nominating Committee for Elective Councilors:	Charlotte V. Leach, New York, N. Y. Catherine E. Vavra, R.N., Seattle, Wash.
Member of Association Standing Committee on Eligibility, 2-year term:	Chester S. Bowers, Hartford, Conn. Ralph Kuhli, Chicago, Ill.

(The present Section Secretary is Norma Johannis, State Dept. of Public Health, Denver 3, Colo.)

PUBLIC HEALTH NURSING SECTION NOMINATIONS

Chairman:	Margaret McLaughlin, Charlottesville, Va. Julia D. Smith, R.N., Chapel Hill, N. C.
Vice-Chairman:	Kathleen M. Leahy, R.N., Seattle, Wash. Lillian G. Ostrand, R.N., Ann Arbor, Mich.
Secretary:	Agnes L. Fuller, New York, N. Y. Ann K. Magnussen, R.N., Washington, D. C.
Member of Section Council, 5-year term:	Marion I. Murphy, R.N., Minneapolis, Minn. Jeannette Rosenstock, R.N., Pittsburgh, Pa.
Member of Association Nominating Committee for Elective Councilors:	Alice K. deBenneville, Pittsburgh, Pa.

(The present Section Secretary is Agnes Fuller, Public Health Service, 42 Broadway, New York, N. Y.)

STATISTICS SECTION NOMINATIONS

Chairman:	Harry Auerbach, J.S.D., Chicago, Ill. Bernard G. Greenberg, Ph.D., Chapel Hill, N. C.
Vice-Chairman:	Matthew Tayback, Sc.D., Baltimore, Md. Howard West, Alexandria, Va.
Secretary:	Robert D. Grove, Ph.D., Arlington, Va.
Member of Section Council, 5-year term:	Ann Dillon, Nashville, Tenn. Margaret F. Shackelford, Oklahoma City, Okla.
Member of Association Nominating Committee for Elective Councilors:	Paul W. Shipley, Berkeley, Calif.

(The present Section Secretary is Robert D. Grove, Ph.D., 2114 N. Powmatan St., Arlington, Va.)

THE SCIENTIFIC AND TECHNICAL EXHIBITS

84th Annual Meeting

Atlantic City, N. J., Convention Hall

November 12–15, 1956

Delegates to the 84th Annual Meeting will see many scientific exhibits entered by official and voluntary health agencies and many exhibits sponsored by commercial agencies which offer useful services and products to the public health profession.

The exhibits are an extension of the scientific program. Some project certain subject matter included in the program. Others introduce information which speakers will not cover. All will add to knowledge.

The exhibit will be open daily from 9:00 A.M. to 5:00 P.M. on Monday, Tuesday, Wednesday, and Thursday.

The exhibitors to date and the major emphasis of their exhibits are listed below.

SCIENTIFIC EXHIBITORS

and what is being exhibited

American Academy of Pediatrics—home accident prevention

American Cancer Society—the tumor registry

American Cancer Society, Philadelphia Division, Inc.—a comprehensive community cancer education program

American Cyanamid Co.—prevention and treatment of poisoning by phosphate ester insecticides

American Dietetic Association—the diabetic diet

American Heart Association—how doctors examine hearts for evidence of heart disease

American Hospital Association—the integration of professional hospital personnel

American Nurses' Association—

American Occupational Therapy Association—the story of occupational therapy

American Red Cross—mounted blood derivative exhibit and a nursing anniversary exhibit

Army Chemical Corps—microbiological safety for laboratory personnel

Association for the Aid of Crippled Children—the program of the association, its research grants, joint support of a rehabilitation center for children, and publications

Baltimore City Health Department—housing law enforcement in Baltimore, 1939–1956

Joseph Bulova School of Watchmaking—rehabilitation of the severely disabled; medical and vocational follow-up

Canadian Department of National Health and Welfare—

Cleveland Health Museum—the future of health museums

Colgate Palmolive Company—time-lapse motion pictures of the gingivae

Common Cold Foundation—common cold research progress

County Tuberculosis Clinics, Cleveland—significance of solitary pulmonary nodules in a mass chest x-ray survey

Department of Health, Education, and Welfare—

Children's Bureau—programs for

mentally and physically handicapped children
Division of Hospital and Medical Facilities—progress in hospital and medical facilities construction
Division of International Health and the International Cooperation Administration—international health activities of the United States Government
Division of Personnel—activities of the Public Health Service
Division of Special Health Services—Treponema pallidum complement fixation test
Office of Vocational Rehabilitation—the new vocational rehabilitation law
Federal Civil Defense Administration—radiological defense
Florida Board of Health, Pediatric Society, and the American Academy of Pediatrics—Florida poisoning control centers
Food and Drug Administration—fiftieth anniversary of the Food and Drug Administration
Health Insurance Plan of Greater New York—comprehensive medical care
Illinois Department of Public Health—female sterility
Kessler Institute for Rehabilitation—low back pain in industry
Medical Society of Pennsylvania—basic services—local health department
Mental Health Materials Center—APHA Committee on Child Health publications and human relations aids program packet service
Metropolitan Life Insurance Company—balancing energy intake and output to control weight
Michigan Crippled Children Commission—prevention of rheumatic fever recurrences
Milwaukee Health Department—undiscovered tuberculosis in derelicts
Muscular Dystrophy Associations of America, Inc.—manifestations of muscular dystrophy
National Association for Mental Health—
National Association of Social Workers—materials from medical and psychiatric social work related to public health
National Foundation for Infantile Paralysis—evaluation of poliomyelitis vaccine
National Foundation for Muscular Dystrophy, Inc.—role of a voluntary health agency in the community
National Health Council—do-it-yourself for health careers
National League for Nursing—public health nursing services
National Publicity Council for Health and Welfare Services, Inc.—program aides
National Sanitation Foundation—the program of the National Sanitation Testing Laboratory
National Society for Crippled Children and Adults, Inc.—resources for public health personnel
National Tuberculosis Association—the rehabilitation story
New Jersey Department of Health—maternal and child health services
New Jersey Division of Motor Vehicles—New Jersey Accident Prevention Clinic
New York City Department of Health—poison control center; services to the handicapped
New York State Department of Health—epidemiological study of human factors involved in motor vehicle accidents
New York University—safety education and accident prevention
Pennsylvania Department of Health—home accident prevention
Planned Parenthood Federation of America, Inc.—quest for fertility control
Research Foundation—BCG vaccination against tuberculosis
Stritch School of Medicine, Loyola University—new organic fibro-cellu-

lose powder for exudative diseases of the skin

United Cerebral Palsy Associations, Inc.—program planning for the cerebral palsied

U. S. Air Force Medical Service—occupational health in the Air Force

U. S. Army Medical Service—Army health nursing program

U. S. Navy—tuberculosis control in the U. S. Navy

Veterans Administration and the Johns Hopkins University School of Hygiene and Public Health—air hygiene in tuberculosis

Walter Reed Army Institute of Research—acute respiratory illness

World Health Organization—eradication of communicable disease

TECHNICAL EXHIBITORS

and what is being exhibited

Airkem, Inc.—odor counteractants

American Can Co.—nutrition literature

American Dry Milk Institute, Inc.—educational exhibit on nonfat dry milk solids

American Hospital Supply Corp.—products for the bacteriological and diagnostic laboratory

American Medical Association—"Today's Health"

American Optical Co.—ophthalmic instruments

American Tobacco Co., Research Laboratory—scientific research

A.R.F. Products, Inc.—ultraviolet water purifier

Association of American University Presses — books from university presses

Association Conventions Exhibits—combined book exhibit

Baby Development Clinic — Evenflo products; Dial soap

Baltimore Biological Laboratory, Inc., Division of Becton, Dickinson & Co.—bacteriological media, biochemical apparatus

Becton, Dickinson & Co.—syringes, needles, blood donor sets, and laboratory products

Beltone Hearing Aid Co., Audiometer Division—Beltone audiometers

The Best Foods, Inc.—Nucoa, Hellmann's, and Best Foods spreads and condiments

S. Blickman, Inc.—microbiological and modular biological laboratory equipment

Blakiston Division, McGraw-Hill Book Co., Inc.—medical and nursing textbooks and reference books

Bristol-Myers Co.—instructional visual aids on good grooming and dental health

Carnation Co.—products for infant feeding, cooking, and general diet

Case Laboratories, Inc.—bacteriological culture media; multidisks

Cereal Institute, Inc.—health and nutrition education materials on breakfast and breakfast cereals

Chilean Iodine Educational Bureau, Inc.—Iodine in surgery, medicine, nutrition, and sanitation

Chrysler Corp.—safety education campaign with automobile safety features and accessories

Coca-Cola Co.—"Refresh Yourself with Coca-Cola"

Columbia University Press, CMC—books, pamphlets, films, recordings, posters in health field

Cream of Wheat Corp.—literature and charts; enriched and regular Cream of Wheat

Difco Laboratories—diagnostic reagent

and culture media for public health and other microbiological laboratories

Economics Laboratory, Inc.—dishwashing detergents and equipment; germicides

J. Edwards & Co.—children's orthopedic footwear

Encyclopaedia Britannica—1956 edition of Encyclopaedia Britannica

Evaporated Milk Association—nutrition publications, posters, and film information

Ford Division of Ford Motor Co.—Ford lifeguard design display

Galvanized Ware Manufacturers Council, Lawrence H. Selz Organization, Inc.—galvanized steel garbage cans for controlling rats and flies

Hanovia Chemical & Manufacturing Co.—germicidal equipment

Health Insurance Council—health insurance information exhibit

Hobart Manufacturing Co.—food preparing, dishwashing, and glasswashing machines

Homemakers' Products Corp.—antiseptic skin preparations

Hopkins Uniform Co.—public health nurse uniforms and accessories

Human Factors Research Bureau, Inc.—literature on industrial health and related fields

Industrial Acoustics Co., Inc.—audiometer testing room

International Equipment Co.—centrifuges and accessories designed for public health laboratories

John Hancock Mutual Life Insurance Co.—health education materials

Kimberly-Clark Corp., Cellucotton Division—educational aids and films on menstrual health and the common cold

Kimble Glass Co.—laboratory glassware

Kruse Advertising Displays—Kruse Kit show man porta-table

Licensed Beverage Industries, Inc.—literature on alcoholism as a medical and public health problem

Eli Lilly & Co.—pharmaceuticals and biologicals

Lily-Tulip Cup Corp.—educational material for food-handler training courses

MacGregor Instrument Co.—Vim hypodermic needles, syringes, and surgical specialties

The Macmillan Co.—books for the public health profession

The Maico Co., Inc.—audiometers, hearings aids, etc.

Medical Coaches, Inc.—mobile medical coach and trailer clinics

C. V. Mosby Co.—books for health workers

National Association of Margarine Manufacturers — information, nutritional data, and legislative literature on margarine

National Dairy Council—health and nutrition education materials

National Live Stock & Meat Board—nutrition education publications

North American Philips Co.—scientific instruments

Oval Wood Dish Corp.—Ritespoons and Riteforks; Riteshape tongue blades

Parke, Davis & Co.—pharmaceuticals, biologicals, and surgical dressings

Pepperidge Farm Inc.—bread, rolls, and bakery products

Pepsi-Cola Co.—"Refreshing, Ice-Cold Pepsi-Cola"

Pet Milk Co.—evaporated milk and instant non-fat dry milk

Powers X-Ray Products, Inc.—equipment, methods, and material for conducting group chest radiography

Procter & Gamble Co.—Ivory soap, leaflet pads containing routine instructions on six different topics

Procter & Gamble Co., Drug Products Division—Crest toothpaste

Public Health Committee of the Paper Cup & Container Institute—literature pertaining to sanitation in public eating and drinking establishments; food-handler training aids

G. P. Putnam's Sons—text and reference books for nursing, hospitals, and health

Revlon Products Corp.—Silicare medicated protective lotion

Ross Laboratories—Similac for infant feeding

Salem-Brosius, Inc.—water purification units and Sabro portable bacteriological water analysis laboratories

W. B. Saunders Co.—text and reference books

Sealright Co., Inc.—sanitary plastic coated paper milk bottle closures and cartons

The Seven-Up Co.—Seven-Up venders, 7-Up merchandising devices

The Sodiphene Co.—antiseptic mouthwash and gargle

E. R. Squibb & Sons—pharmaceuticals

Sterwin Chemicals, Inc.—Roccal, sanitizing agent and other quaternary germicides

Tampax, Inc.—educational material on menstrual health

Wallace & Tiernan Inc.—chlorination equipment

Wyeth Laboratories—antibiotics

Yorke Publishing Co., Inc.—"The American Journal of Medicine" and "The American Journal of Clinical Nutrition"

84th ANNUAL MEETING

HOW TO MAKE HOTEL RESERVATIONS FOR THE ATLANTIC CITY MEETING

A HOUSING BUREAU will be operated by the Atlantic City Convention Bureau for the 84th Annual Meeting of the APHA in Atlantic City, N. J., November 12–16. Since all requests for rooms will be handled in chronological order, you are urged to send in your reservation as quickly as possible. (See map of hotels on page 936 in the July, 1956, issue.)

Hotels and Rates *

Hotels	Rooms with Bath		Two Rooms—One Bath			Parlor, Bedroom, Bath Suite
	Single	Double	2-Persons	3-Persons	4-Persons	
Abbey †	$6.00– 8.00	$ 8.00–14.00				
Ambassador	6.00–18.00	8.00–20.00			$16.00–28.00	$20.00–45.00
Breakers	5.00–11.00	7.00–18.00		$10.00–19.00	12.00–25.00	
Brighton	6.00–10.00	8.00–14.00			22.00	22.00–28.00
Carolina Crest †	5.00– 7.00	8.00–10.00				
Chelsea	6.00– 8.00	10.00–16.00		12.00	15.00–18.00	
Claridge	7.00–15.00	11.00–19.00				36.00
Crillon †		8.00–12.00				
Dennis	7.00–10.00	10.00–22.00		18.00	22.00–30.00	35.00–45.00
Eastbourne	6.00– 8.00	8.00–11.00	$12.00	14.00	16.00	
Flanders	6.00– 7.00	8.00–12.00	12.00–13.00	16.00–18.00	18.00–20.00	
Holmhurst	4.50	8.00			28.00–32.00	
Jefferson	6.00– 8.00	8.00–12.00	12.00–14.00	14.00–16.00	16.00–22.00	
Kentucky	3.00– 4.00	6.00– 7.00	8.00	10.00		
Lafayette	6.00– 8.00	8.00–12.00				20.00–24.00
Madison	6.00– 8.00	7.00–12.00		12.00–16.00	14.00–20.00	
Mark	5.00– 7.00	6.00–10.00			16.00	
Marlborough-Blenheim	6.00– 9.00	10.00–20.00	15.00–17.00	15.00–19.00	17.00–22.00	34.00–40.00
Monticello	4.00– 5.00	5.50– 7.00		9.00	11.00–12.00	
Morton	6.00– 8.00	9.00–12.00			16.00–18.00	
New Belmont	4.00– 5.00	6.00–10.00	8.00	12.00	14.00	
Penn-Atlantic	4.00– 5.00	7.00– 8.00		11.00–12.00	14.00–16.00	17.00
President	5.00–10.00	8.00–15.00				13.00–24.00
Ritz-Carlton	6.00–10.00	8.00–22.00			24.00	35.00
Runnymede †	5.00– 8.00	7.00–10.00	15.00	17.00–19.00	18.00–20.00	
Seaside	5.00– 9.00	8.00–14.00		17.00		28.00
Senator	6.00–10.00	8.00–16.00	12.00–16.00	14.00–20.00	16.00–24.00	28.00
Shelburne	7.00– 9.00	10.00–18.00		21.00–24.00		41.00–43.00
Sterling	5.00– 6.00	8.00–10.00		12.00	14.00–16.00	

* The above rates are subject to 3 per cent Municipal Tax.

† Rate includes breakfast.

Note: Some hotels may require a deposit.

HOTEL RESERVATION FORM

PLEASE MAKE RESERVATIONS NOTED BELOW
(Please Print or Type)

First Choice..... Hotel Arrival ....., at ..... a.m. ..... p.m.

Second Choice..... Hotel Departure ....., at ..... a.m. ..... p.m.

Third Choice..... Hotel Two Rooms—One Bath for:

Single room @ $..... to $..... 2 Persons @ $..... to $.....

Double room @ $..... to $..... 3 Persons @ $..... to $.....

Suite @ $..... to $..... 4 Persons @ $..... to $.....

NAMES OF ALL OCCUPANTS: ADDRESSES:

....

....

....

....

PLEASE CONFIRM TO: .....
(complete mailing address) .....
.....

MAIL THIS FORM TO: **Housing Bureau**
16 Central Pier
Atlantic City, N. J.

Association News

Recruitment Study Under Way

The American Public Health Association has been awarded a research grant from the Public Health Service to study the problem of recruitment of physicians into all phases of public health practice. This project is the result of study by a Subcommittee on Recruitment of the Committee on Professional Education. Under the chairmanship of Franklyn B. Amos, M.D., the subcommittee recognized the need for research in factors influencing recruitment of public health personnel and has begun with physicians.

The application to the National Institutes of Health Research Grants Division was prepared by the subcommittee and submitted on behalf of the Association with the approval of Philip E. Blackerby, Jr., D.D.S., chairman of the Committee on Professional Education, with the understanding that the study will be carried out in the name of the Association at the University of North Carolina School of Public Health, Chapel Hill. John H. Venable, M.D., of the Georgia State Department of Health, Atlanta, will be the principal investigator. The local supervision of the study will be under the direction of Professor B. G. Greenberg, Department of Biostatistics of the School of Public Health. The aim of the study is to define as many as possible of the factors which influence the choice and continued pursuit of public health as a profession by physicians.

The proposed objective will be reached by follow-up studies of medical students, interviews of a representative cross-section of physicians presently engaged in public health, and intensive study of physicians who have recently withdrawn from public health.

The full-time personnel being assembled to conduct this study starting September, 1956, include a physician-director, two senior social psychologists, and a senior biostatistician. In addition, clerical and field operations personnel will be engaged as needed. The project has been planned to cover a period of from three to five years.

Medical Care Has Regional Meeting

A regional meeting of the Association's Medical Care Section, organized by Leonard S. Rosenfeld, M.D., director, Medical Care Evaluation Studies, United Community Services of Metropolitan Boston, was held at the Harvard School of Public Health on June 13, 1956. George Reader, M.D., director of the comprehensive medical care and teaching program at Cornell Medical Center, New York City, and recent past president, New York City Public Health Association, is reported to have held the audience captivated in a discussion of "Studies in Patient Care: Some Problems in Doctor-Patient Communication." About thirty persons attended with Franz Goldmann, M.D., of the Harvard Medical School, presiding.

Dr. J. N. Muller Leaves APHA Staff

Jonas N. Muller, M.D., M.P.H., staff director of the APHA Subcommittee on Medical Care, with headquarters in New Haven, Conn., has resigned his position, effective August 31, to become professor and director of the Department of Preventive Medicine, Public Health and In-

dustrial Hygiene at New York Medical College, Flower Fifth Avenue Hospital, New York City.

Dr. Muller, who has been associated with the subcommittee staff since July, 1952, will begin his duties in the Medical College in September, but will remain technical consultant to the subcommittee on a part-time basis through the end of December, 1956.

California's Alcoholism Commission

California's 1956 Legislature created the State Alcoholic Rehabilitation Commission and appropriated $423,000 for its work including the establishment of clinics for the treatment of alcoholics. Clinics are to be established in nine California cities, Fresno, Los Angeles, Oakland, Pasadena, Sacramento, San Diego, San Francisco, San Jose, and Stockton, through the cooperation of either the city councils or the county boards of supervisors. It will be up to the local agency involved to decide whether to set up the clinic under a contract with the state. Specific sums are allocated to each community, ranging from $81,000 in Los Angeles to $25,000 each in five of the smaller cities.

Dr. David Frost, director of the commission, announces that the objective of the program "is to treat and rehabilitate alcoholics and gather information necessary for the commission to draft a plan for the handling of the problem of alcoholism in California." The clinics will not replace but supplement the work of Alcoholics Anonymous and other helpful agencies.

APHA membership application blank appears on page XXXVII

News of Affiliated Societies and Branches

Western Branch and Utah Meet Jointly

The 23rd Annual Meeting of the Western Branch was held in Salt Lake City, Utah, May 30–June 2. The president of the branch was G. D. Carlyle Thompson, M.D., state health officer of Montana. The secretary was Mrs. L. Amy Darter of the California State Department of Health.

Preceding the meeting a two-day session was held of the Committee on Migratory Labor Health Problems, whose chairman is Frederic M. Kriete, M.D., assistant director, Division of Preventive Medicine, California State Department of Health. Migrant labor and its health problems also occupied the final general session of the later meeting.

Featured sessions included one on local health service problems, with special reference to Utah and British Columbia. Projects in the prevention of blindness in health departments of Oregon and California reported by Eleanor B. Gutman, M.D., and William D. Simmons attracted much attention.

A session on juvenile delinquency, applying the technics of public health and epidemiology, cooperation in training ventures, and school health were prominently placed on the program of the general sessions.

Section meetings were held representing the interests of epidemiology, the public health laboratory, health educators, industrial hygiene, records and statistics, and venereal disease.

The John J. Sippy Memorial Award for 1956 was presented to LaVerna Peterson, director of nursing services in Weber and Morgan Counties, Utah, for her extended and high quality public health nursing contributions.

The Utah Public Health Association, with Dorothy C. Lowman as president, held its meetings during the week and elected Professor Grant K. Borg of the University of Utah to the presidency for the coming year.

The new officers of the Western Branch include:

President—A. Harry Bliss, University of California School of Public Health, Los Angeles

President-Elect—G. R. F. Elliot, M.D., D.P.H., assistant provincial health officer, Department of Health and Welfare, Vancouver, B. C.

Vice-Presidents—S. P. Lehman, M.D., Seattle, Wash.; William W. Stiles, M.D., Berkeley, Calif.; Robert Dyar, M.D., Berkeley, Calif.

Harold M. Erickson, M.D., state health officer of Oregon, was reappointed representative to the Governing Council, APHA.

The Regional Board adopted a resolution supporting the proposal that a memorial stamp recognizing the public health services of the late Samuel J. Crumbine, M.D., former state health officer of Kansas, should be issued. The Western Branch also reaffirmed its support of controlled fluoridation of public water supplies to reduce dental caries as a public health measure.

The 1957 annual meeting of the Western Branch will take place in Long Beach, Calif., May 29–June 1, and the 1958 meeting in Vancouver, B. C., the week of May 18.

1956 Visits to Affiliated Societies and Branches

Readers of the Journal will recall that President Ira V. Hiscock has appointed an ad hoc committee representative of various parts of the country and of different State Societies and Branches to explore and strengthen the relationships of the APHA with its Affiliated Societies and Branches. Dr. Malcolm H. Merrill, state director of health of California, is the chairman of this ad hoc committee.

Dr. Merrill has suggested that the APHA staff summarize the contacts that they have had with 34 of the State Societies and Branches during recent months.

This assignment was welcomed by the staff because of the opportunity to gather firsthand information and to renew acquaintances, especially with the oncoming generation of promising public health workers. President Hiscock has visited the Puerto Rico Public Health Association and has met with the Texas, New York State, and New England groups. Dr. Edward Press, field director, has met with the officers of six state groups, Francis Elder, engineering associate, with nine, including the Southern Branch, Dr. Reginald M. Atwater, executive secretary, has met with 20, including the Western Branch and the Middle States group (there were several overlaps in the visits). All in all this has been the most complete coverage that state societies and regional groups have ever had. They have asked that these visits be continued and they have repeatedly pointed out that the visit of someone among the officers of the APHA, the staff, or the Governing Council provides an opportunity that will make recognition of the link to the APHA more effective.

Looking broadly at the country, there are five Affiliated Societies, including that in Cuba, that have not been visited in 1956. However, active negotiations are under way for the organization of Affiliated Societies in nine states and the staff has been involved in most of these. States in which there is no likely prospect of early organization or affiliation include Maine, Vermont, New Hampshire, Rhode Island, New Jersey, and the Territories of Alaska and Hawaii.

The staff has noted the manifest differences between the state societies. They differ greatly in size, leadership, and resources. Where there is a strong and stable state health department they tend to flourish. They need many services, some of which the APHA can supply, but no one formula will meet the need. A flexible pattern appears to be a necessity for the situation changes continually from month to month. Most of the Affiliated Societies and Branches concentrate their energies on an annual meeting. For some this is the entire program. Others add newsletters, committee work, interest in state legislation, interest in graduate education. Three or four state groups now hold more than one meeting a year. One has employed a secretary and others are discussing this step.

After consultation with Dr. Merrill and officers of the Association, it was decided to offer to the western states for May of 1957 the services of an APHA team of speakers. Interest has been expressed by eight states in having visits from this team which would resemble other teams used in previous years. A series of eight meetings has been proposed in Arizona, Utah, Oregon, Idaho, Montana, Wyoming, Colorado, and New Mexico just preceding the meeting at the end of May of the Western Branch at Long Beach, Calif.

Some progress has been made in signing up participants which hopefully will be led by Dr. John W. Knutson, now president-elect of the APHA, and the Assistant Surgeon General, Public Health Service. Other members of the team will include an administrative health officer, a microbiologist, a public health nurse, a sanitary engineer, a health educator and, it is hoped, some member of the ad hoc committee. Dr. Atwater will participate as discussion leader. The success of the team planned depends upon the willingness of various agencies to underwrite the cost of the participants from their staffs. It is expected that similar services can be offered to other regional groups in other years.

The record shows definite progress

in the first six months of this ad hoc committee. The Executive Board has expressed its appreciation of the work they have done. Many hundreds of persons have been made more aware of the interest of the APHA in its Affiliated Societies and Branches. It is recognized that this is no short-range assignment, but it is the hope of the ad hoc committee and of the Executive Board that with this momentum it may be possible to move along toward more complete resolution of the problem.

North Carolina's 45th Year

The 45th annual session of the North Carolina Public Health Association was held May 31–June 1 in Charlotte, with over 500 in attendance. The theme of the meeting was "The Scientific Process in Public Health." Papers presented at the first general session dealt with the "Scientific Process in Community Development for Health." The sociology, labor, industry, and agriculture viewpoints on community development were presented by leaders in the respective fields.

The importance of epidemiology in the scientific process was related to population changes, prevention of traffic accident injuries, and the prevention of such diseases as rabies. These presentations were followed by a session of 10-minute capsules on how North Carolina is taking part in the scientific process. Here reports were given of actual studies, research, and programs contributing to the scientific process in the state.

The association presented two awards: the W. S. Rankin Award for outstanding service over a period of years to John H. Hamilton, M.D., assistant state health officer and director of the State Laboratory of Hygiene; the Merit Award, for the most outstanding health department during the year, to the Buncombe County Health Department, whose health officer is H. W. Stevens, M.D. For the first time the association awarded a scholarship to a member for a year's study at the School of Public Health. The recipient is Jacob Koomen, Jr., M.D., of the State Board of Health. Another first for the association was the presentation of service pins to 108 persons who had served 25 years or more in public health in North Carolina.

New officers for the association for the coming year are:

President—Edward G. McGavran, M.D., dean, School of Public Health, Chapel Hill
Vice-President—Lynn Maddry, Ph.D., assistant director, State Laboratory of Hygiene, Raleigh
Secretary-Treasurer—Betty E. Briggs, Sanitary Engineering Division, State Board of Health, Raleigh

The association's annual meeting for 1957 will be held jointly with the Southern Branch of the APHA, May 28–31, in Asheville.

West Virginia Celebrates 75 Years

The West Virginia Public Health Association, holding its 32nd annual state Health Conference in Charleston on June 6–8, gave special recognition to the 75th anniversary of the State Board of Health. Among the commemorative activities were an address by the state director of health, N. H. Dyer, M.D., at the first general session and a reception and banquet attended as well by many citizens outside the health field.

Among other items of the program was a forum on "Public Health—Everybody's Business" in which representatives of the State Medical Society, State Society for Crippled Children, the State Home Demonstration, State Department of Public Assistance, and a local health officer and local school superintendent participated.

A one-day health education workshop sponsored by the State Department of Health preceded the conference. With

the theme, "The Citizen Talks Back," participants included representatives of state women's clubs, industry, the press, and others.

Outgoing president of the association is Eugene M. Ashworth, chief, Rehabilitation Service, State Division of Vocational Rehabilitation. New officers elected are:

President—Oliver Matthews, senior sanitarian, Preston County Health Department
Vice-Presidents—Bruce H. Pollock, M.D., health officer, Huntington-Cabell Health Department; Oleta M. Riffe, R.N., supervising nurse, Logan County Health Department
Executive Secretary—Harry M. Huff, director of vital statistics, State Health Department
Treasurer—Katherine L. Brown, chief clerk, Bureau of Tuberculosis Control, State Health Department

Georgia Discusses District Plans

The Georgia Public Health Association used its annual gathering for the discussion of immediate practical problems. Meeting in Savannah, May 28–30, with an attendance of about 500, the theme was "Progress Under the District Plan."

Georgia's district plan, adopted by the State Health Department in 1954, organizes the state's 159 counties into 38 districts to which the state provides supervisory medical, nursing and sanitarian personnel, and shares in the salaries of other personnel employed by the respective counties. Recently, "30 and 8 covers the state" has been adopted as a slogan. At the Savannah meeting it was reported that 12 of these districts comprising 43 counties are now in operation, but with one county missing in each of three. The director of local health services of the State Department of Health, S. C. Rutland, M.D., led the panel discussion on the district plan which was shared in by personnel from five of the districts.

By way of fertilizing content of program in the new districts a number of experts drawn from numerous fields and areas of the country led discussions on "Public Health in Transition," "Present Status of Communicable Diseases," "Home Safety," "Public Health and Preventive Medicine in Everyday Practice," and "Public Relations." In the meetings of the eight sections Georgia state and local workers chiefly discussed the various problems with which the new districts are concerned.

W. D. Lundquist, M.D., health officer of the Bryan-Bulloch-Effingham-Evans District Department was the outgoing president. Newly elected officers are:

President—L. G. Lenert, director, Engineering Division, Georgia Department of Public Health
President-Elect—Ernest B. Davis, secretary-treasurer, Georgia Department of Public Health
Vice-President—Mariemma Jackson, clerical field representative, Northeast Regional Health Office, Athens
Secretary—J. F. Hackney, M.D., commissioner of health, Fulton County Health Department, Atlanta
Treasurer—Eva Mae McDaniel, accountant, Georgia Department of Public Health
Representative on the Governing Council, APHA—E. G. Eggert, public health engineer, Central Regional Health Office

Resolutions endorsing fluoridation and commending the retiring director of the state's tuberculosis program, H. C. Schenck, M.D., for his work were passed. The 1957 meeting will be held in Augusta, March 12–15.

Colorado Public Health Association

The 1956 meeting of the Colorado Public Health Association was held in Estes Park, June 7–8, under the presidency of Robert K. Anderson, D.V.M., of the Denver Department of Health and Hospitals. More than 250 were in attendance. Reginald M. Atwater, M.D., executive secretary, brought the greetings of the APHA as well as news of Affiliated Societies.

Featured subjects included "Water—

Its Influence on Colorado's Economy," "The APHA and Its Affiliated Societies," "Progress in Public Health Through Teamwork," and "Twenty Years of Public Health in Colorado."

A special luncheon session recognized the two decades of continuous service which R. L. Cleere, M.D., M.P.H., has rendered the state as executive officer of the State Department of Health.

The Florence Sabin Award was presented to Senator Norman J. Miller, M.D., practicing physician of Eaton, for his distinguished service, particularly in legislation, as a member of the Health Subcommittee of the Colorado Postwar Planning Committee and its executive board, Chairman of the House Committee on Health and Welfare, while a state representative, and for his participation in the formation of the Weld County Health Department.

The officers for the coming year include:

President—Helen Cannon, medical social worker, Colorado State Department of Health, Denver

President-Elect—Margaret E. N. Beaver, M.D., Mesa County health officer, Grand Junction

Vice-President—Martin Baum, D.V.M., director, Veterinary Public Health Service, Colorado State Department of Health

Secretary—Margaret D. Lewis, assistant director, Visiting Nurse Association, Denver

Treasurer—P. W. Jacoe, chief, Environmental Health Service, State Department of Health

The secretary's report indicated that there are 502 members of the Colorado Public Health Association.

The 1957 meeting will be held in Colorado Springs, May 24–25.

APHA AFFILIATED SOCIETIES AND BRANCHES

Society and Secretary

ARIZONA PUBLIC HEALTH ASSOCIATION, Evelyn Longstreth, 225 W. Washington, Phoenix

CALIFORNIA, NORTHERN, PUBLIC HEALTH ASSOCIATION, Constance Cavender, Alameda Co. Health Dept., 15000 Foothill Blvd., San Leandro

CALIFORNIA, SOUTHERN, PUBLIC HEALTH ASSOCIATION, Gerald A. Heidbreder, M.D., 241 No. Figueroa St., Los Angeles

COLORADO PUBLIC HEALTH ASSOCIATION, Margaret D. Lewis, 659 Cherokee St., Denver

CONNECTICUT PUBLIC HEALTH ASSOCIATION, Mrs. Claire Reinhardt, 310 Cedar St., New Haven

CUBAN PUBLIC HEALTH SOCIETY, Dr. Raphael Calvo Fonseca, San Rafael 1170, Havana

FLORIDA PUBLIC HEALTH ASSOCIATION, Nathan J. Schneider, Ph.D., P. O. Box 210, Jacksonville

GEORGIA PUBLIC HEALTH ASSOCIATION, J. F. Hackney, M.D., 224 Central Ave., S.W., Atlanta

IDAHO PUBLIC HEALTH ASSOCIATION, Mrs. D. W. McDougal, P. O. Box 563, Boise

ILLINOIS PUBLIC HEALTH ASSOCIATION, William B. Hixon, Evanston Health Dept., Evanston

IOWA PUBLIC HEALTH ASSOCIATION, Mary L. Wombacher, State Dept. of Health, Des Moines

KANSAS PUBLIC HEALTH ASSOCIATION, Evelyn Ford, State Board of Health, State Capitol, Topeka

LOUISIANA PUBLIC HEALTH ASSOCIATION, Mrs. Velma Brume, Dept. of Health, New Orleans

MASSACHUSETTS PUBLIC HEALTH ASSOCIATION, Helen P. Cleary, 695 Huntington Ave., Boston

MICHIGAN PUBLIC HEALTH ASSOCIATION, Maurice J. Mayer, 405 Hollister Bldg., Lansing

MINNESOTA PUBLIC HEALTH CONFERENCE, D. S. Fleming, M.D., State Dept. of Health, University Campus, Minneapolis

MISSISSIPPI PUBLIC HEALTH ASSOCIATION, Mrs. Cassie S. Feagin, P. O. Box 1700, Jackson

MISSOURI PUBLIC HEALTH ASSOCIATION, Mrs. Nadia Craver, 5th Fl., State Office Bldg., Jefferson City

MONTANA PUBLIC HEALTH ASSOCIATION, Mrs. Emma Wright, Box 811, Havre

NEW MEXICO PUBLIC HEALTH ASSOCIATION, Robert Howell, 305 Terrace Ave., N. E., Albuquerque

NEW YORK CITY, PUBLIC HEALTH ASSOCIATION OF, Joseph Kadish, 164 W. 174th St.

NEW YORK STATE PUBLIC HEALTH ASSOCIATION, Mary C. Egan, New York State Department of Health, Albany, N. Y.

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION, Mrs. Betty E. Briggs, State Board of Health, Raleigh

NORTH DAKOTA PUBLIC HEALTH ASSOCIATION, Mrs. Cora Shelstad, Court House, Finley

OHIO PUBLIC HEALTH ASSOCIATION, Virginia Jones, Ohio Dept. of Health, Dayton

OKLAHOMA PUBLIC HEALTH ASSOCIATION, Marjorie Butler, 3400 North Eastern, Oklahoma City

PENNSYLVANIA PUBLIC HEALTH ASSOCIATION, Robert H. Conn, 303 N. Second St., Harrisburg

PUERTO RICO PUBLIC HEALTH ASSOCIATION, Conchita Carrasquillo, Apartado 211, San Juan

SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION, Mrs. Carrie B. Du Priest, State Board of Health, Columbia

SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION, Florence S. Dunn, State Dept. of Health, Pierre

TENNESSEE PUBLIC HEALTH ASSOCIATION, C. B. Tucker, M.D., State Dept. of Health, 470 Sixth Ave., N., Nashville

TEXAS PUBLIC HEALTH ASSOCIATION, H. E. Drumwright, City Health Dept., Dallas

UTAH PUBLIC HEALTH ASSOCIATION, Mrs. Mildred Engar, Salt Lake City Board of Health, 115 So. State, Salt Lake City

WASHINGTON STATE PUBLIC HEALTH ASSOCIATION, Muriel Thompson, State Dept. of Health, Smith Tower, Seattle

WEST VIRGINIA PUBLIC HEALTH ASSOCIATION, Harry M. Huff, State Dept. of Health, Charleston

WISCONSIN ASSOCIATION FOR PUBLIC HEALTH, Paul Weis, 1 W. Wilson St., Madison

SOUTHERN BRANCH, A.P.H.A., Joseph M. Bistowish, M.D., P. O. Box 1117, Tallahassee, Fla.

WESTERN BRANCH, A.P.H.A., Mrs. L. Amy Darter, State Dept. of Health, 2151 Berkeley Way, Berkeley, Calif.

Employment Service

The following pages present information for those seeking public health personnel and for those seeking positions in public health. Other information concerning vacancies and personnel available is on file in the Association office. Anyone wishing to have the benefit of this additional information can obtain it by writing to the Vocational Counseling and Placement Service of the Association.

Advertising space in these pages is available at special rates for the use of employers or individuals. The charges are $5 for the first 50 words or fraction thereof and $1 for each additional 10 words or fraction thereof. There is no charge to members or Fellows of the Association who desire to utilize the **Positions Wanted** portion of these pages. **Closing date** for receipt of advertisements is the first of the month preceding the desired month of publication.

POSITIONS AVAILABLE

Regional Health Officer—for northern region of Alaska. Will also serve as health officer for city of Fairbanks. Administrative experience in public health required and M.P.H. desirable. Salary open. Excellent personnel benefits, including six weeks' annual vacation. Write to Charles Hayman, M.D., Acting Commissioner of Health, Alaska Office Bldg., Juneau, Alaska.

Full-Time Health Officer—For central California county. New building, well staffed. Position now open. Salary range $741–$888 per month. Applicant must be a citizen and California board eligible with training in public health work. Write Kings County Board of Supervisors, Hanford, Calif.

Medical Officer—to serve as chief of division of tuberculosis control in local health department serving county of 400,000 population. Well organized program carried on in close cooperation with the medical profession and the voluntary agency. One of Southern California's finest residential and recreational areas. Salary range $755–$797–$842–$889–$940. Apply Orange County Personnel Dept., 644 North Broadway, Santa Ana, Calif.

Residency in Preventive Medicine and Public Health—One-year approved residency in local health department serving county of 400,000 population. Applicants will be expected to pursue graduate work in public health upon completion of residency. California license or eligibility for California license required. Salary will be determined by qualifications ($641 for inexperienced applicant, $755 with one year or more of experience). One of Southern California's finest residential and recreational areas. Apply Orange County Personnel Dept., 644 North Broadway, Santa Ana, Calif.

District Health Officer—Three-county unit with headquarters at Bend. Population 40,000. East slope Cascade range central Oregon. Ideal climate. Excellent fishing and hunting. Salary $10,500. Retirement. M.D. plus M.P.H. Write Mr. A. T. Johnson, Personnel Director, Oregon State Board of Health, P. O. Box 231, Portland, Ore.

Deputy Director of Public Health—available January 1, 1957. M.D., licensed to practice in Virginia. Staff of 47, serves progressive urban area adjacent to Washington, D. C. Generalized public health program. Initial salary $8,200 per year. Write, giving qualifications, to Director of Public Health, Alexandria, Va.

Qualified Public Health Nurse—for visiting nurse association on beautiful Monterey Peninsula. Salary $3,600 with adequate mileage allowance; early increase with satisfaction; liberal personnel policies. Write Nurse Director, P. O. Box 3721, Carmel, Calif.

Public Health Nurse—$370, $391, $413, $436, starting salary dependent upon qualifications. Generalized program; county car or eight cents per mile; 37½-hour week. For further information write to Garold L. Faber, M.D., M.P.H., Director, Butte County Health Dept., P. O. Box 1100, Chico, Calif.

Qualified Public Health Nurse—Must be eligible for California certificate. Salary $376–$458; travel allowance for use of private car. Write to San Benito County Health Dept., Health Center Bldg., Hollister, Calif.

Public Health Nurses—for generalized program. Liberal personnel policies; 37½-hour week. Own car, eight cents per mile travel allowance. Beginning and intermediate positions are available. Beginning salary, depending on experience and qualifications, $3,600 and up, with automatic increases. Apply: Director, Northeast Colorado Health Dept., 700 Columbine St., Sterling, Colo.

Staff Nurses in Public Health—Generalized service under qualified supervision. Class 1: registered nurse as trainee in public health, start at $3,380, maximum $4,056 in five years. Class 2: registered nurse with

bachelor's degree and four months of public health training, or one year of academic training in public health and experience, start at $3,718 and maximum $4,472 in five years. Car required, allowance $385. Vacations, sick leave, and Social Security. Address G. B. Davis, M.D., Director of Health, 7 Academy St., Norwalk, Conn.

Public Health Nurse-Instructor—Opening for qualified public health nurse in maternal and child health division. Service-teaching program, with participation in research activities. Bachelor's degree desired. Approved PHN program and one year's experience required. Beginning salary depending on experience and qualifications. Opportunity for study. Other employee benefits. Write Miss Elizabeth M. Edmands, Assistant Professor, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, Md.

Public Health Staff Nurse—Generalized program in an official agency. Located in resort area of southwestern Michigan. Field training agency offering opportunity for field teaching experience. Liberal personnel policies, including five-day week, Social Security, vacation of two working days per month cumulative to 24 working days, liberal car allowance. Staff education program. Write A. B. Mitchell, M.D., Medical Director, Allegan County Health Dept., Allegan, Mich.

Chronic Disease Nursing Consultant—Location, 16 miles from downtown Detroit. Salary $5,832–$6,372; 40-hour week. Graduate of accredited nursing school, B.S. in public health nursing, master's degree desirable. Five years' experience in public health nursing under qualified supervision. Specialized training and/or experience in chronic disease control required. Contact: Amalia Krause, Director of Nurses, Wayne County Health Dept., Eloise, Mich.

Public Health Nursing—Positions available in Health Department with the city of Flint, a rapidly growing city of 180,000 population. Beginning, intermediate, and administrative positions are available. Five-day, 40-hour week, with liberal retirement, vacation, and sick leave policies. Car furnished. Beginning salary rates: $3,952, $4,329, or $4,654, depending on experience and qualifications. Automatic increases and longevity rates for length of service. Apply Flint Civil Service Commission, City Hall, Flint, Mich.

Staff Public Health Nurse—City-county health unit. Population 47,000. Health conscious community with excellent clinical and research facilities. Staff includes full-time health officer and other specialists, including 13 qualified staff nurses. Generalized program. Active student program. Degree or certificate in public health nursing. Mileage seven and one-half cents per mile. Salary $325 and up, according to experience. Dorothy E. Anderson, Director of Public Health Nursing, Public Health Center, Rochester, Minn.

Public Health Nurse Consultant, Maternal and Child Health—To provide technical program guidance and staff education in maternal and child health area of a generalized public health nursing program. Salary $5,400 to start, with four annual increases to $6,480. Permanent career service; liberal benefits. Qualifications: four years of public health nursing experience, including one year in a teaching, consulting, supervisory or administrative capacity, and one year in the field of maternal and child health. Master's degree in public health nursing or public health nursing education with major course work in maternal and child health. Miss Madelyn Hall, Director of Public Health Nursing, Philadelphia Dept. of Public Health, Room 615, City Hall Annex, Philadelphia, Pa.

Supervisor in Public Health Nursing—generalized with orthopedic program. Population 100,000. Public health staff experience and academic preparation necessary. Supervisory experience and B.S. degree desirable. Good personnel policies. Salary based on experience and qualifications. Apply to Visiting Nurse Association, 218 East Market St., York, Pa.

Public Health Nurse Supervisor—Qualifications: four years' experience in recognized public health agency, one of which shall have been in supervisory capacity. Possession of certificate of public health training and eligibility to practice nursing in the State of Virginia. Salary range $372–$447. Civil Service Commission, Room 203, City Hall Annex, Norfolk, Va.

Public Health Nurse Superintendent—Qualifications: five years' experience in recognized public health agency, two of which shall have been in supervisory or teaching capacity. Possession of certificate of public health training and eligibility to practice nursing in the State of Virginia. Salary range $426–$512. Civil Service Commission, Room 203, City Hall Annex, Norfolk, Va.

Public Health Nursing Supervisor—Generalized nursing program in city of 320,000 population, not including school health services. Salary $417–$510 monthly; after October 1, 1956, $439–$537; 40 hours a week, annual and sick leave. Retirement benefits. Degree and two years' supervisory experience in public health agency required. Must qualify for California registration and public health nurse certificate. Write I. D. Litwack, M.D., Health Officer, Dept. of Public Health, 2655 Pine Ave., Long Beach 6, Calif.

Air Sanitation Director—$624–$750. Challenging new position to formulate and implement effective air pollution control pro-

gram for Contra Costa County, Calif. Apply Contra Costa County Civil Service Commission, Box 710, Martinez, Calif.

Air Pollution Control Officer—(Southern California) New position; new and growing field. Salary $647 start; periodic increases to $786. Also, annual review of salaries; paid vacations, sick leave, holidays, part-paid health insurance, retirement. College and four years' engineering experience; equivalencies acceptable. Write County Civil Service, 236 Third St., San Bernardino, Calif.

Public Health Engineer—Degree in sanitary or civil engineering and five years' public health engineering experience. Act as director of sanitation in city of 160,000. Salary $8,400. No expense money for city travel. Write Health Commissioner, Gary Health Dept., 1429 Virginia St., Gary, Ind.

Public Health Engineering—Engineering positions open in water supply, water pollution control, general sanitation, $5,040–$7,500. **Sanitarians**—general sanitation, $3,600–$6,000. **Water Biologist**—$3,960–$5,220. Central and regional offices. Director of Personnel, Iowa State Dept. of Health, State Office Bldg., Des Moines, Iowa.

Industrial Engineer—Salary $6,720, with increments to $7,680. Qualifications: chemical engineering degree and five years' experience, part of which must have been in industrial work. (A master's degree or public health training may be substituted for two years' experience.) Write Merit System Supervisor, State Health Dept., 620 S. Third, Louisville, Ky.

Public Health Engineers—College degree in sanitary or industrial hygiene engineering, plus at least one year of experience. Salary $487 or $536 per month, depending on qualifications. Write Nevada State Personnel Dept., Carson City, Nev.

Industrial Hygienist—Well established chemical manufacturers in Midwest have opportunity for an industrial hygienist to help supervise and carry out an expanding health program. Experience with hazards of radioactivity essential. Please submit full details of background and experience in letter to Box IH-7, Employment Service, APHA.

Public Health Engineer (male)—City of Dallas. Salary $402–$533. Degree or equivalent in civil, sanitary, or chemical engineering. Three years' experience in public health or sanitary engineering. Obtain application and information from Civil Service Board, Room 401, Municipal Bldg., Dallas, Tex.

Director of Sanitation—with Midwest city of 80,000. Administration of sanitation, food, sanitary fill, and miscellaneous health programs. B.S. in sanitary or public health engineering and some experience. $500–$620 per month. For application write Board of Health, City Hall, St. Joseph, Mo.

Milk Sanitarian—to do farm sanitation work for Midwest city of 200,000 population. Car furnished. Appointment will be made pending civil service examination. Necessary qualifications include B.S. degree in dairy industry. Salary is $320–370 per month. Write John F. Graves, Personnel Officer, City Hall, Des Moines, Iowa.

Shellfish Bacteriologist—Located in small coastal town. Complete charge of laboratory. Liberal vacation, sick leave, and retirement. Starting salary $4,512, with increments to $5,640. Requirements: degree with major studies in biological sciences and two years' experience in shellfish work. Write Director of Personnel, Virginia State Health Dept., Richmond 19, Va.

Dental Hygienist—To carry out the dental hygiene program for the school children of Contra Costa County, Calif. Must have a California license and have completed a four-year curriculum in dental hygiene in an approved university, or have completed a two-year curriculum with two years of practical experience. Salary $414–$496 per month. Contact Box 710, Martinez, Calif.

A leading national voluntary health association has openings in various parts of the country in many categories—**Field Workers, Health Educators, Executive Secretaries, Executive Directors.** Master's degree in health or related fields desirable, but not essential. Some experience in public health, community organization, or administration of voluntary health agency required. Positions and salaries commensurate with education, experience, and placement. Please send résumé to Box C-31, Employment Service, APHA.

Assistant Administrative Director—for territorial agency. Successful completion of one year of graduate work in public health or public administration required, as well as four years' full-time paid experience in a voluntary or official health agency, two years of which was in an administrative capacity. Salary $6,780, with annual increments. Excellent personnel benefits, including six weeks annual vacation. Write to Charles Hayman, M.D., Acting Commissioner of Health, Alaska Office Bldg., Juneau, Alaska.

Public Health Analysts—at three levels in state department of public health. Positions require college graduation, plus technical experience in public health research or statistical work as follows: **Associate Public Health Analyst,** $6,672–$8,112 per annum, three years' experience; **Assistant Public Health Analyst,** $5,496–$6,672, two years'

experience; $4,512–$5,496, one year's experience. Statistical or research work in scientific fields other than public health may be substituted for part of the required experience. Contact Personnel Officer, Dept. of Public Health, 2151 Berkeley Way, Berkeley, Calif.

Research, Psychiatric Clinic Administration and Community Services—New position in statistical research office of state mental health authority. Maintain, extend, clinic reporting program. Prepare analyses, releases. Develop research projects jointly with clinics. Starting salary to about $500, depending on background. Send résumé to Irving Miller, Statistician, Indiana Division of Mental Health, 1315 W. 10th St., Indianapolis 7, Ind.

Dentist—Unusual opportunity for a young dentist interested in pedodontics. Full-time position as director of new clinic in recently dedicated community public health center in Brookline, Mass., with faculty appointment and teaching affiliation at large eastern school of dental medicine. Salary $8,000 per annum with excellent retirement and travel benefits. Apply to Dean Cyril D. Marshall-Day, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Mass.

Supervising Public Health Nurse—Public health nursing experience and completion of course of study in public health nursing. Two positions open. Salary $360–$450. Car furnished. Fresno County Civil Service Office, Room 101, Hall of Records, Fresno, Calif.

Public Health Nursing Supervisor—Generalized nursing program in a large city health department; diploma and collegiate student affiliation. Salary open for discussion, based on experience and qualifications; 40-hour week; 12 working days vacation; sick leave; pension. Bachelor's degree, approved PHN course, and three years' experience required, one of which should have been in a supervisory capacity. Write: Bureau of Public Health Nursing, Room 703 Municipal Bldg., P. O. Box 1877, Baltimore 3, Md.

Wanted: Qualified **Municipal Health Department Administrator** — Person with M.P.H. degree or equivalent and considerable experience in health department administration to head department of health and welfare in city of 95,000 population located in the heart of the Ozarks recreational area; possibility of eventual direction of combined city and county health department with a jurisdiction of approximately 120,000 population. Position includes over-all supervision over 50-bed city hospital. Contact City Manager, City Hall, Springfield, Mo., for application. State minimum salary acceptable and earliest date available.

Sanitarian—Yolo County, Calif. Range $322–$392. Fully qualified, with California registration, may start on second step at $338. A Junior Sanitarian, who could qualify for California registration after one year's experience, would start at step one, $322. Address: Hugh G. Hart, Director of Sanitation, Yolo County Health Dept., Room 102, Court House, Woodland, Calif.

Public Health Educator II needed—Denver, Colo. Master's degree and two years' experience as public health educator required. Salary $458–$575. Emphasis on chronic illnesses and preventive medicine. For further details write Career Service Authority, Room 178, City and County Bldg., Denver, Colo.

Health Educator—General community program, including public, professional, and patient education. Formal training in public health education or related fields, plus experience in community health work desired. Bronx Tuberculosis and Health Committee of the New York Tuberculosis and Health Association, Inc., 226 E. Fordham Rd., Bronx 58, N. Y. Apply: Mrs. Beryl Downey, Executive Secretary.

Health Education Consultant—to act as assistant to the health education director, assisting in work of health education division as assigned. Responsibilities include consultation and other services on patient education, school, professional education, community, and other programs. Master's degree in public health, education, or related fields with five years' experience, including semi-administrative and community organization. For particulars direct inquiry to: Mrs. Katherine Whipple, Director, Health Education Division, New York TB and Health Association, 386 Fourth Ave., New York 16, N. Y.

Director of Health—For the city of Waterbury, Conn. Must have degree and experience in public health administration and be eligible for Connecticut licensure. Write to Christopher E. Dwyer, M.D., President, Board of Health, Waterbury, Conn.

Public Health Nutritionist—Develop and conduct program in district area, including consultation to nurses, teachers, social workers, small hospitals, nursing homes, children's institutions; training programs; community studies; and education. Master's degree, internship, two years' hospital and community nutrition experience. Salary $4,992–$5,772, plus travel expense. Vacation, sick leave, Social Security, retirement. Dr. Amy Louise Hunter, State Board of Health, Madison, Wis.

Wanted: **Sanitary Engineer, Stream Biologist, and Sanitary Chemist**—We have need for a Sanitary Engineer, Stream Biologist, and a Sanitary Chemist. Excellent opportunities for security and advancement. Salary dependent upon training and experience. Write Personnel Supervisor, State

Board of Health, P. O. Box 210, Jacksonville, Fla.

Engineer—Public health engineer to direct divisions of environmental health for Grand Rapids and Kent County Health Departments. Applicants must have M.P.H. in addition to engineering degree. Fine staff. Good community. Salary open. Write: W. B. Prothro, M.D., Health Department, Grand Rapids, Mich.

Health Educator—Educator wanted to develop and conduct health education program in Kent County. Population 120,000. Will work closely with health educator in Grand Rapids; good supporting staff and program. Beginning salary $5,000–$5,300, depending upon experience. Write: W. B. Prothro, M.D., County Health Dept., Grand Rapids, Mich.

Public Health Engineers—Grades I, II, and III. Salaries $360–$625. Bachelor's degree in engineering required. Starting salary dependent on qualifications and experience. Work is in state-wide stream pollution control program. Write State Board of Health, Laboratory Bldg., Helena, Mont.

Cerebral Palsy Therapists—For work with cerebral palsy children attending clinics and school in Alameda County. Salary $394–$484. Liberal vacation, sick leave, and retirement benefits. Requirements: **Occupational Therapist**—registration with National Registry and one year of supervised experience after recognized course. **Physical Therapist**—legal requirements for practice in California and one year supervised experience after graduation from approved school. Apply: James C. Malcolm, M.D., M.P.H., Director, Alameda County Health Dept., 15000 Foothill Blvd., San Leandro, Calif.

International Vacancies

Malariologists, Public Health Administrators, Public Health Engineers, Public Health Nurses, Nurse Educators—There are several positions open in Latin America and the Caribbean for persons in the above categories. The essential qualifications are public health training and extensive field experience. Malariologists need considerable experience in malaria programs and use of the new residual insecticides. Nurses require advanced training in public health nursing or nursing education, as well as extensive experience in supervision, administration and/or teaching. Spanish is desirable in nearly all cases. Salaries and allowances range from $6,000 to $11,000 per annum. For further particulars, write to the Personnel Officer, PASB/WHO, 1501 New Hampshire Ave., Washington 6, D. C.

POSITIONS WANTED

Dentist—Four years' experience in clinical dentistry, including one year clinical fellowship in pedodontics, seeks position in public health as clinical dentist. Licensed in New York State and South Dakota. Write **Box D-16,** Employment Service, APHA.

Public Health Physician—M.D., University of Minnesota, 1916; Ph.D., 1924. Private practice and teaching in Ob-Gyn. Public health experience in county and state health department and as director of voluntary agency. J. W. Bell, M.D., Veteran's Domicile, Clinton, Iowa.

Public Health Engineer—Desires employment in city or county health department or combination. Good technical training, unusually wide experience, capable and reliable. Now employed in supervisory capacity. Write **Box E-34,** Employment Service, APHA.

Public Health Educator—B.S., M.P.H., and certificate from Yale Summer School of Alcohol Studies. Seven years' experience with school health, local health departments, director of alcoholism center. Desires postion as health education consultant, director of voluntary health agency, school health coordinator, or executive director of alcoholism program. Complete résumé available upon request. Write **Box HE-77,** Employment Service, APHA.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

(a) Director of health; rapidly growing progressive community, population 63,000; city manager-council government; $12,000–$14,000. (b) Chief health officer, university city, East; $14,000. (c) Epidemiologist; foreign operations, major industrial company; $14,000 plus home, family maintenance; tax free. (d) Medical director, student health

department; 2,800 students; attractive university town, West. (e) Director, public health nursing, county department; college town, 70,000; mountain area, California; $5,000–$6,400. (f) Consultant; state public health department; ability improve nursing service; knowledge prevention, remedial procedures; $5,400, travel expenses, South. (g) Health consultant to teach hygiene and school health, state university; public health nurse with master's eligibility. (h) Industrial hygiene engineer and industrial hygiene chemist; will be responsible for directing air pollution program, working directly in industrial hygiene; California. (i) Health inspector experienced meat and dairy products inspection; foreign; $700. (j) Health educator to serve as executive secretary, health council composed of 55 community and welfare organizations; interesting city outside U. S. (k) Director, state public health laboratory; degree, minimum year in laboratory supervisory capacity; $6,120.

OPPORTUNITIES WANTED

WANTED—Opportunities for public health physicians, nurses, educators, engineers, public health laboratory personnel. Candidates in all parts of the country, available for administrative, academic, and staff appointments. Negotiations strictly confidential.

Insect and Rodent Control Courses

Training courses in insect and rodent control are being offered for personnel of federal, state, and local health departments by the Training Branch of the Communicable Disease Center. These are to give a working knowledge of the control of insects and rodents affecting the health and well-being of man, with training in both the laboratory and the field.

A course in insect control is scheduled for September 17–28, 1956; in rodent control, October 1–12; and in mosquito control, November 5–9, 1956. Similar courses are scheduled for March, April, and May, 1957.

A special advanced two-week course in the biology and identification of arthropods of public health importance particularly useful for entomologists and biologists is scheduled for December 10–21, 1956.

Interested individuals should apply through their organizations to the Chief, Training Branch, CDC, 50 Seventh St., N.E., Atlanta 23, Ga.

News from the Field

WHO News

PASB Plans for the Coming Year

The Executive Committee of the Pan American Sanitary Bureau, meeting in Washington, June 5–13, approved a 1957 budget of $2,400,000, an increase of 8 per cent over the 1956 budget. The committee also accepted a further recommendation of PASB's director, Fred L. Soper, M.D., that $100,000 of the year's surplus funds be added to a building reserve fund, with the proviso that this fund could be drawn upon "in the event that additional funds should be necessary for the intensification of the malaria eradication program."

A total of 16 resolutions were adopted for presentation to the tenth meeting of PASO Directing Council in Antigua, Guatemala, in September. Dr. Jorge Jimenez Gandica, director of Colombia's Division of Public Health, was chairman of the Washington meeting; Dr. Manuel A. Sanchez Vigil, director, National Institute of Hygiene, Nicaragua, vice-chairman. The United States representative was Frederick J. Brady, M.D., of the Division of International Health, Public Health Service.

Progress in Malaria Eradication

At a meeting of some 50 malariologists in Athens under WHO auspices reports were made of the substantial decrease in malaria in many countries. In Southern Europe, from Spain to Bulgaria, there were at the end of World War II four million cases of malaria annually. Present estimate is fewer than 10,000 in the same area. In Greece where there were from one to two million cases annually before World War II, there were but 408 in 1952. The effect of this decrease on agriculture has been so great that Greece is now an exporter rather than an importer of rice, and its wheat production has increased greatly. In Italy where there were 400,000 cases in 1945, there were but three new cases of local origin ten years later.

This conference agreed that it is technically possible to eradicate malaria from the whole area, success depending on the solution of administrative and financial problems. Paul F. Russell, M.D., medical consultant to WHO on loan from the Rockefeller Foundation, attended the meeting.

Technical Assistance Aid to Health

The eighth annual report of UN's Technical Assistance Board in its review of 1955 activities, details a number of health projects assisted. Among those most prominently mentioned are the treatment of half a million persons in Morocco and Tunisia for trachoma, among whom a high percentage of cures have been reported. Other successful projects have resulted in the fact that epidemic malaria is no longer prevalent in nearly half of the island territories in the Caribbean. About two-fifths of the population of South East Asia now benefit from antimalaria measures. In India, more than forty million persons have been given some health education by antituberculosis teams organized with international assistance.

Brazzaville Office for Africa

Permanent headquarters are in prospect for the WHO Regional Office in Africa. By an agreement between WHO and the French government, the office will be located in "Cite du D'joue" about five miles from Brazzaville. The French government will build administrative offices and housing accommodations for the staff, presently numbering 90, and lease them to WHO. In addition, it will furnish all facilities and

services such as road maintenance, insect control, etc.

The Regional Office for Africa works in more than 30 countries and territories south of the Sahara participating in some 100 health projects of the area. The regional director is Dr. F. J. C. Cambournac.

Health-Related Decisions of the 84th Congress

Among the bills relating to health passed by the 84th Congress is Senate Joint Resolution 183, authorizing $400,000 toward the expense of holding the 11th World Health Assembly in the United States in 1958, marking 10 years since the adoption of the WHO constitution.

Changes were made in the executive salaries of the Public Health Service (H.R. 7619), including a new salary for the Surgeon General ($20,000), Deputy Surgeon General ($19,000), and the bureau chiefs of medical services, state services, and National Institutes of Health ($17,500 each). Additional allowances are provided in each case. The so-called "supergrade" of civilian scientists in federal employ now have a top salary of $19,000. The Service, according to the Washington Report on the Medical Sciences, has 60 of these positions, most of them at the National Institutes of Health.

H.R. 12152 was passed to encourage individual gifts to medical research organizations by permitting deduction of such donations up to 30 per cent of adjusted gross income.

H.R. 7225, the Social Security Bill, will now include all professional health personnel except physicians. Osteopaths and dentists are included.

S. 3430 was adopted to establish a National Library of Medicine.

Action was completed on the Omnibus Health Bill (S. 3958) and funds were provided to implement traineeship programs as follows: traineeships for graduate nurses and practical nursing attendants, $2,050,000 and $2,000,000, respectively; for graduate training grants to professional public health personnel, $1,040,000.

Also, the second supplemental appropriations bill as finally enacted provided: for matching grants to support construction of medical research facilities, $30,000,000; for water pollution grants and administrative expenses, $54,100,000; for preparation of plans for buildings to house the National Institute of Dental Research, $200,000; for preparation of plans for building to house the National Library of Medicine, $350,000; for construction of new animal housing quarters at the National Institutes of Health, $1,371,000.

Biological Stain Commission

The Biological Stain Commission, Inc., founded in 1923, is composed of representatives of 14 national societies, including the American Public Health Association, of which Edmund K. Kline, Dr.P.H., Olean, N. Y., is the representative, and a small number of elected members. Its affairs are administered by a board of 11 trustees. The commission maintains offices and a laboratory at the University of Rochester, 260 Crittenden Boulevard, Rochester 20, N. Y., to which manufacturers of stains submit batch samples which are tested for purity and satisfactory performance in the procedures in which commonly used. Certification labels are sold to manufacturers to be affixed to bottles of stains found satisfactory.

The annual report of the commission laboratories states that during the year 1955 a total of 68 batches of stain were examined, of which 59 were found suitable and approved to bear the certification label. A total of 55,000 labels were sold during the year.

The laboratory also reports that paper

chromatographic work on Orcein and Janus green has been carried out in cooperation with the stain manufacturers, looking toward the production of a better product. Similar work has been started on Wright's stain and Safranin. Acridine yellow of different batches, both foreign and domestic, has shown marked variation in usefulness in a fluorescence test in connection with a diagnostic test for cancer. Chromatography has revealed an important constituent of these samples and a method has been developed to improve and properly assess such dyes.

The Board of Trustees has found it necessary, because of rising costs to increase the price of certification labels, beginning September 1, 1956. The former price of 15 cents per label has been increased to 20 cents, the first change in label price in over 20 years.

At the annual spring meeting of the commission, the following officers were reelected for the ensuing year: Frank H. J. Figge, president; Sidney I. Kornhauser, vice-president; Victor M. Emmel, secretary; and Elmer H. Stotz, treasurer. Harold A. Davenport continues as editor of the commission's publication, "Stain Technology."

Keeping ICA Fellows Abreast of U. S. Professional Developments

The International Cooperation Administration, Washington, has announced that more than 31,000 foreign technical specialists who have received training in the United States under programs sponsored by ICA will have an opportunity to keep abreast of developments in their professions in the United States. ICA is enlisting the cooperation of American professional associations to help the foreign specialist keep in contact with their counterparts in the United States. The associations are encouraged to offer the foreign specialist memberships, subscriptions to technical journals, bulletins, and other publications of practical value, together with personal answers to requests and assistance if desired in forming professional societies in their own countries.

Several thousand of these ICA fellows in recent years who have received training in the United States are public health workers, many of whom are from newly developing countries where there are few if any professional associations. Until such professional societies can be set up in these countries, ICA in cooperation with the American Public Health Association and other professional organizations in North America intends to bridge the gap. The ultimate goal is to link persons of a given profession with each other on a world-wide basis in the spirit of fraternity and of sharing "know-how."

The APHA is among seven United States professional societies that have already started cooperating with ICA to test the effectiveness of the plan. The American Nurses' Association, American Home Economics Association, American Statistical Association, and the American Society of Public Administration are also among these cooperating agencies. The initial contracts are for a period of three years, during which time it is expected that lasting connections may be established between these overseas leaders and their American colleagues.

Since incomes in most newly developing countries are much lower than for comparable work in the USA, and since there are difficulties in exchange, ICA from Technical Cooperation funds, will meet a major portion of the costs, but associations and the technicians themselves are contributing their share.

Study by foreign technical specialists from 51 nations in the United States has been an important part of various technical cooperation and economic assistance activities in the ICA. Except for Greece and Turkey, Europe is not

included in this stage of the program, since in most European countries professional associations have been in existence for years.

25 Years of Child Guidance

The Bureau of Child Guidance, Division of Child Welfare, New York City Board of Education, said to be the largest child guidance clinic in the world, celebrates its 25th anniversary on October 20, 1956, with an all-day conference and luncheon at the Waldorf Astoria Hotel, New York City. The conference will offer seven symposiums on: Cooperation Between Clinic and Classroom; Ways of Meeting the Needs of the Mentally Retarded Child; Problems of Adolescence; Problems of the Aggressive Child; Reading Difficulties and Other Learning Problems; Problems of the Withdrawn Child in the School Setting; and The Community Role in Helping Troubled Children.

Registration fee, $5.50, without luncheon $1.50. For further information and reservation address 25th Anniversary Committee, Bureau of Child Guidance, 346 E. 117th St., New York 35, N. Y.

Labor-Management Health Plans

A foundation to promote efficiency and expand benefits of industrial health plans has been created by the International Association of Machinists and U. S. Industries, Inc., the latter a national manufacturing company employing about 6,000 persons in divisions in five states, Puerto Rico, and the Philippines. The purpose of the foundation is to develop plans for the broadest possible range of health and welfare benefits including preventive medicine, psychiatric care, ophthalmic and dental treatment for workers and their families at the lowest possible cost and in the most effective and economical way. It is hoped that the foundation's findings can be made available to other companies and labor organizations as a public service.

Co-chairmen of the foundation's Board of Directors are A. J. Hayes, president of the machinists' union, and John I. Snyder, president of U. S. Industries. Theodore W. Kheel, impartial chairman of the private transit industry in New York and labor counsel to U. S. Industries, is serving as executive director without compensation. Martin E. Segal, Consultants, are retained as consultants in welfare fund administration.

The complete Board of Directors of the Foundation on Collectively Bargained Health and Welfare Plans is in process of selection. The first meeting will be held in the Machinists' Building in Washington, D. C., early in October.

New York Academy of Preventive Medicine

The New York Academy of Preventive Medicine recently held its first annual scientific meeting in New York City in connection with the annual meeting of the New York State Medical Society. The program, arranged under the chairmanship of Norvin C. Kiefer, M.D., chief medical director of the Equitable Life Assurance Society, dealt with various aspects of preventive medicine.

V. A. Van Volkenburgh, M.D., assistant commissioner, State Department of Health, was the retiring president. New officers elected are:

President: Franklin M. Foote, M.D., executive director, National Society for the Prevention of Blindness
President-Elect: Morton L. Levin, M.D.
Vice-President: Franklyn B. Amos, M.D.
Secretary-Treasurer: Walter C. Levy, M.D.

The latter three are each on the executive staff of the State Health Department.

Chicago Premature Baby Centers

The first of two new premature baby centers in Chicago made possible by state aid was recently established at Grant Hospital. The new center, accommodating 20 infants, is supported by funds of the premature babies program of the Illinois State Health Department. The remodeling and equipping of the center was supported by the Egon W. Fischman Memorial Foundation of the hospital.

AFL-CIO Murray-Green Award

The AFL-CIO Community Services Committee has established the Murray-Green Award to honor the memory of their two great leaders and to recognize and encourage outstanding achievements in the area of community service. The Murray-Green Award, consisting of a grant of $5,000 and an appropriate medallion properly inscribed, is to be given annually although the committee may determine in any given year that no suitable recipient has been proposed for the award, and thus make no award for that year.

The award may be given either to an individual or organization in the United States or any part of the world in recognition of outstanding achievement in the fields of health, welfare, recreation, or international social welfare, the cash grant to be designated for a specific purpose in the field of community service agreed upon jointly by the AFL-CIO-CSC and the recipient.

Nominations for the award may be made to the director of the Community Services Committee by any member of CSC, by officers and others in AFL-CIO, and by recognized leaders in the social welfare field. The recipient is selected from these nominations. The 1956 award is to be made at a public dinner in November. AFL-CIO Community Services Committee, 1776 Broadway, New York 19, N. Y.

VA to Increase Research

The United States Congress has appropriated ten million dollars, an increase of more than 40 per cent over 1956, to the Veterans Administration for fiscal 1957 to enlarge its research program. The four areas in which the increased medical research will reportedly be concentrated are: (1) mental, nervous and brain diseases; (2) heart and artery diseases; (3) cancer and leukemia; and (4) problems of aging.

Border Public Health Association

The Journal is indebted to a news release of the Pan American Sanitary Bureau for the material on which this report of the 14th annual meeting on April 13–16 of the U.S.–Mexico Border Public Health Association is based.

A number of resolutions were passed urging both the Mexican and United States government authorities concerned with migrant workers to carry out fully the terms of the Mexican-United States agreement; commending the PASB for its yellow fever control activities and urging all local, state, and national health authorities to take all possible means to eradicate the Aedes aegypti mosquito; urging health agencies on both sides of the border to study beefworm infestation in migrant laborers; urging health authorities to send as many representatives as possible to the First International Symposium on the Venereal Diseases, which was held in Washington in late May; and calling on each section of the association to compile a list of personnel to facilitate exchange of technical information and of personnel in training activities.

The 1957 meeting will be held in San

Antonio, Tex.; the 1958 in Hermosillo, Sonora, Mexico. The retiring president was George W. Marx, director, Bureau of Sanitation, Arizona State Health Department. Newly elected officers are:

President: Dr. Guillermo Soberanes, jefe, Servicios Coordinados de Salubridad y Assistencia, Hermosillo
President-Elect: Malcolm H. Merrill, M.D., director, California Department of Health
Vice-Presidents: Dr. Salvador Chapa Garza, chief, Health and Welfare Center, Nuevo Laredo, Tamaulipas; David Cowgill, M.D., director, Cameron County (Tex.) health officer.

News of Schools—Mostly Public Health

Preventive Medicine at Harvard

The Harvard School of Public Health has begun a program designed especially for teachers of preventive medicine, as a part of its policy of concentrating on the development of leaders in teaching and research. The full program, under the direction of Carl Taylor, M.D., assistant professor of epidemiology and preventive medicine, will begin in the fall. During the current academic year, Dr. Taylor has started an experimental seminar with six students who will return to their own universities to teach preventive medicine. The six are from Australia, Egypt, Japan, Portugal, and the United States.

The new program is planned on the theory that a teacher of preventive medicine should have competence in both clinical medicine and public health. An individualized program will be provided so that each student may concentrate during the first year on the particular aspect of his training that needs developing. Clinicians will take most of their work at the School of Public Health; those with public health background will be provided with special experience in clinical medicine. The two groups will join for preventive medicine seminars and the course in ecology. It is expected that students will learn to apply the preventive approach to the community as well as to the individual.

During the first summer students will participate in research programs with particular emphasis on methodology. The first quarter of the second year will be devoted chiefly to seminars on teaching methods. For the remaining three quarters, students will be assigned to departments of preventive medicine in other medical schools as members of the teaching staff. Cooperative arrangements for this purpose have been made with six other medical schools. As a part of this program a monthly peripatetic seminar of two days for all of the students will be held in rotation at the various schools for an analysis of the strong points of each department.

Dr. Taylor has recently returned from India where he organized a department of preventive medicine at the Christian Medical College, Ludhiana, Punjab. Serving with him on the school committee for the new program are Drs. Fred Mayes, Franklin Neva, and James L. Whittenberger. Consultants are Drs. John E. Gordon, Hugh R. Leavell, Thomas H. Weller, and Jane Worcester of the school, and Henry J. Bakst, M.D., professor of preventive medicine, Boston University School of Medicine.

Army Contracts for Hopkins Study

The Department of Medicine of the Johns Hopkins Hospital and School of Medicine has entered into a contract with the Army Chemical Corps, Fort Detrick, Md., to conduct a broad program of laboratory and clinical investigation in the field of infectious disease. Ivan L. Bennett, Jr., M.D., associate professor of medicine and chief of the Biological Division of the Hopkins institutions, is in charge of the program with the assistance of a research team of eight physicians, three on the staff

of the Department of Medicine, and five on a fellowship basis drawn from Hopkins, the Rockefeller Institute, and Emory University.

The major portion of the work at Hopkins will be conducted in the new medical laboratories of the recently completed 15-story hospital building as well as facilities in many parts of the school and hospital. The Chemical Corps is making available laboratory and clinical facilities at Fort Detrick. As a part of the program occupational illnesses among the personnel at Fort Detrick will receive study and medical care, using the facilities of the Johns Hopkins Hospital for special diagnostic, treatment, or consultant services.

Cardiovascular Nurse Training

The Training Program for Nurses in Cardiovascular Disease, held for the first time during the winter of 1956 at the University of Minnesota, will be repeated January 21 to March 23, 1957. The program is given jointly by the School of Public Health and the School of Nursing with consultant and financial assistance by the Public Health Service. Cooperating in the project are the Minnesota Department of Health and several hospital and nursing services in Minneapolis and St. Paul which will offer trainees field and hospital experience in the care of heart patients. Mary Ann McIntyre, R.N., nursing supervisor at the Heart Hospital at the university is coordinator of the program.

Main purpose of the 11-week program is to familiarize nursing leaders with the new developments in the cardiovascular field and their application in communities. The course includes actual care of patients, both in the hospital and home, in addition to seminar discussion and lectures. Nurses selected for the program represent many areas of the United States and different nursing fields.

Early applications are urged since the group will be limited to eight or ten nurses, drawn from consultant, supervisory, and instructor positions. Applications and information on traineeships for the program may be obtained from the University of Minnesota School of Public Health, Minneapolis.

Advanced Study in Chronic Disease

The Graduate School of Public Health, University of Pittsburgh, announces a new program of advanced study and field training for students interested in problems of cancer and other chronic diseases, a program described as the first of its kind supported by the National Cancer Institute. The cost of the program, budgeted at approximately $100,000 per year for five years, is shared equally by the National Cancer Institute and the school. Advanced students taking part in the program are physicians, statisticians, laboratory research workers, engineers, social scientists, nurses, and other students with suitable interests and professional backgrounds.

Fellowships, provided under the new program, cover tuition and personal stipends for a 24-month period for those who do not have a master of public health degree or for a shorter period for those who do have the degree or its equivalent.

The two-year program provides basic training in public health methods and also gives the student the opportunity to work with community studies relating to chronic diseases and the evaluation of control program activities. Classroom instruction is supplemented by advanced clinical training and field research.

Further information from the Dean, Graduate School of Public Health, University of Pittsburgh, Pittsburgh 13, Pa.

Experience in Tropical Medicine

A fellowship program at the Louisiana State University School of Medi-

cine is designed to give teachers from United States medical schools practical experience in tropical medicine in the American tropics. The program, now in its second year, under a grant from the China Medical Board of New York, is conducted by Henry E. Meleney, M.D., research professor of medicine, and William W. Frye, M.D., dean and professor of tropical medicine. The purpose is to improve the teaching of parasitology and tropical medicine in medical schools and to provide teaching material and a personal knowledge of tropical health conditions and diseases. The original grant has been renewed for the third year by the China Medical Board.

The fellows spend two days at the School of Medicine in an orientation program, reviewing various tropical and parasitic diseases from the global point of view. They then spend eight weeks at the San Juan de Dios Hospital in San Jose, Costa Rica, with a side trip to a United Fruit Company hospital in Panama and stops of several days in El Salvador and Guatemala, or at the School of Medicine, University of Puerto Rico, in San Juan, visiting also the Dominican Republic and Haiti. They all return to New Orleans to make a final report.

The staffs of the Pan American Sanitary Bureau WHO, the Institute of Interamerican Affairs ICA, local governmental ministries and departments of public health, schools of medicine, and, in Puerto Rico, field units of the United States Army and Public Health Service cooperate in the program.

Hospital Administration Program

A new graduate program in hospital administration has been announced by the School of Business Administration, Emory University, Atlanta. The time required to complete is two years of academic work for those who have had a minimum of college work in business administration, one year for those who majored in business or economics, followed in each case by a year's administrative residency in a hospital approved by the university.

The program, leading to an M.B.A. degree in hospital administration, as announced, provides: (1) an intensive study of business functions and current practices; (2) training in analyzing and solving management problems and in making decisions; (3) some specialized and technical preparation in certain areas of hospital operations; and (4) an appreciation and understanding of the position and responsibilities of the hospital administrator as a community leader.

Tuition is $600 for an academic year, living and incidental expenses are estimated at approximately $1,000. Further information from Planning Director, Hospital Administration Program, School of Business Administration, Emory University, Atlanta, Ga.

In this connection the August issue of "Hospitals" lists the institutions giving graduate courses in hospital administration. There are now 16 schools offering such work in 13 states. Of these five are schools of public health some of which offer the degree of Master of Hospital Administration; some the Master of Public Health.

New Program at Northwestern

The Commonwealth Fund has made a $300,000 grant to the Northwestern University Medical School to help finance a basic change in the pattern of medical education at the university. The new program will integrate the laboratory science courses over the four years of medical education. The number of lectures will be reduced in favor of greatly increased personal contact with patients and more and earlier clinical work. There will be new and more thoroughly integrated courses and additions to the faculty. Orientation to the

patient will be stressed by allowing junior as well as senior students to do clinical work with patients in hospitals participating in the school's education program.

A fourth quarter will be added to the school year, but classes will be staggered so that only 75 per cent of the junior and senior students will be in school at any one time. Juniors will study medicine, surgery, pediatrics and obstetrics and gynecology one quarter each, devoting the fourth quarter to vacation or private studies. Seniors may use the fourth quarter to help develop special interests, carry on research, or do other work of their own selection.

Clinical work will be provided for second-year students in a new cooperative course of all the clinical departments, designed to teach a unified, over-all concept of disease processes.

New Professional Training Funds

The Health Amendments Act of 1956 authorizes the Public Health Service to establish a program of traineeships for graduate public health training of professional public health personnel to supplement training activities currently being supported by state and local health agencies. An expert advisory committee is being established to advise on administration, program standards, and policies for the program, which it is hoped may go into operation this year.

Title I of the act provides for graduate or specialized public health training of professional public health personnel and is administered by the Division of General Health Services of the Bureau of State Services. Congress has appropriated $1,040,000 for these graduate training grants under Title I. Title II authorizes traineeships to graduate nurses for advanced work in supervision, administration, and nursing education and is administered by the Division of Nursing Resources. The appropriation for this item is $2,050,000.

The traineeships are available for all types of professional public health personnel—physicians, engineers, dentists, nutritionists, health educators, nurses, and others. Under Title I nurses are trained only for staff level positions. The traineeships may be awarded either to individuals or through grants to the institution providing training. They will include the cost of tuition, travel, living expenses, and other items necessary to accomplish their purpose, as determined by the Surgeon General. In the case of nurses under Ttitle II funds for the traineeships will be given to the schools, not to the individual nurse.

Information on this program, Title I from Dr. Jack C. Haldeman, Chief, Division of General Health Services; Title II, Margaret Arnstein, Chief, Division of Nursing Resources, Public Health Service, Washington, D. C.

Three-State Network of Hospitals

Ten hospitals, in as many mining counties of Kentucky, Virginia, and West Virginia, were dedicated on June 2 by the Welfare and Retirement Fund of the United Mine Workers of America. The dedication services were held at Beckley Memorial Hospital, Beckley, W. Va., one of the three base hospitals in the group with between 100 and 200 beds. The other seven are smaller community hospitals. They provide an initial total of 1,035 beds with the system expandable to 2,000 beds.

According to the prospectus, this chain of hospitals, called the Miner's Memorial Hospital Association, "came into being only because of the unspeakable conditions in many of the coal mining areas." The various nationally known speakers stressed the many significant factors about this hospital chain—Dr. Howard Rusk, their rehabil-

itation possibilities, mentioning particularly the number of retrained disabled miners among the hospital staff, including the administrator of one of the central hospitals; Dr. Elmer Hess, president of the American Medical Association; Josephine Roche, chief executive officer of the Welfare Fund; and UMW president John L. Lewis who presented a bronze dedication plaque to the administrator and chief of clinical services of each hospital.

Dedication ceremonies were attended by some 350 honored guests, including President Ira V. Hiscock, Sc.D., representing the American Public Health Association. In the words of Howard Rusk, M.D., "On hand to greet them were thousands of coal miners and their families from mining communities throughout West Virginia, Virginia and Kentucky, who took their seats hours before the festivities started."

The plans for the hospitals and their construction have created widespread interest. By coordinated planning the cost was a relatively low $16,000 per bed. Low operating costs are anticipated through regional administration, centralized purchasing and other services, and efficient layouts.

Executive medical officer of the Welfare Fund is Warren F. Draper, M.D., formerly Deputy Surgeon General of the Public Health Service. Administrator of the Memorial Hospital Association is Frederick D. Mott, M.D.

Writing in the New York Times, of which he is an associate editor, Dr. Rusk said, "Beckley's great celebration today was a combination county fair, country picnic, and prayer meeting. There was jubilation in the air, but also an overtone of solemn gratitude. The people who mine the nation's coal are ever aware of the danger to the men who work the mines. Partly balancing this thought is the realization for the first time in the history of these communities that modern medical care, second in quality to none, is available to them regardless of what happens."

Transactions of Industrial Hygiene Meeting

At the 20th annual meeting of the Industrial Hygiene Foundation of America at the Mellon Institute, Pittsburgh, Pa., November 16–17, 1955, the growth of the foundation from the original 20-member companies in 1935 to the present 380 was reported. In the 20 years more than 700 special studies have been made and 200 consultation visits paid to the sponsoring organizations throughout the country. Among the subjects of 25 technical papers now available in the Transactions are changing concepts of industrial health, atomic power, noise, workmen's compensation, and especially air pollution in which there has been recent and growing interest. Bulletin No. 29, Industrial Hygiene Foundation of America, Mellon Institute, 4400 Fifth Ave., Pittsburgh 13; $5.

Sanitary Engineering Certification

The lastest specialty board in the public health field is the American Sanitary Engineering Intersociety Board. The American Public Health Association is among its five sponsors, the others being the American Society of Civil Engineers, American Society of Engineering Education, American Water Works Association, and the Federation of Sewage and Industrial Wastes Associations. It is an outgrowth of the recommendation of the Joint Committee for the Advancement of Sanitary Engineering with the stated purpose "to improve the practice, elevate the standards, and advance the cause of sanitary engineering."

The board has received its first application for certification of special competence in sanitary engineering. An engineer who has been graduated

from a recognized school of engineering, is registered as a professional engineer in any one of the 48 states, and has had at least eight years of sanitary engineering experience will be considered for certification. The written examination will be of the multiple choice variety prepared by the Professional Examination Service of the Association. Until July 1, 1957, applicants with at least 15 years of experience may be certified without examination. The fee for certification is $35 of which $10 must be submitted with the application.

Application forms and other information from the Office of the Secretary, Room 1601, 33 West 39th Street, New York 18, N. Y.

PERSONALS

JOHN B. BARNWELL, M.D.,† former director of tuberculosis service, Department of Medicine and Surgery, Veterans Administration, has been appointed assistant chief medical director for research and education. In the tuberculosis post he has been succeeded by WILLIAM B. TUCKER, M.D., professor of medicine, Duke University, and chief of medical service, VA Hospital in Durham, N. C.

STANHOPE BAYNE-JONES, M.D.,* technical director of research, Office of the Surgeon General, U. S. Army, Washington, D. C., in June received the Army's highest civilian award, the Decoration for Exceptional Civilian Service.

LT. COLONEL PHILIP R. BECKJORD, M.C., M.P.H.,* is now in the Division of Preventive Medicine, Walter Reed Army Institute of Research, Washington, D. C.

J. FREDERICK BELL, M.D.,† formerly with the Public Health Service's Rocky Mountain Research Laboratory in Montana, is now on the medical staff of the University of Chicago to direct viral and rickettsial fever research for the U. S. Navy at Cairo, Egypt.

RAY K. BROWN, M.D., formerly on provisional appointment, is now assistant director for biochemistry and immunology, Division of Laboratories and Research, New York State Health Department, Albany.

EDWARD M. COHART, M.D., M.P.H.,* who for the past year has been on leave to serve as deputy commissioner, New York City Department of Health, has been named professor of public health, Yale University School of Medicine, New Haven.

PAUL B. CORNELY, M.D.,* professor of preventive medicine and public health and medical director of Freedman's Hospital, has been named head of the recently established Department of Preventive Medicine and Public Health at Howard University College of Medicine, Washington, D. C.

SIR WELDON DALRYMPLE-CHAMPNEYS, BT, M.A., D.M., E.R.C.P., D.P.H., vice-president, Royal Society for the Promotion of Health, and deputy chief medical officer, British Ministry of Health, retired from the public service at the end of July.

MARY G. DEEGAN, R.N., has been appointed public health nursing consultant, Bureau of Industrial Hygiene, Pennsylvania State Department of Health, Harrisburg.

SAMUEL W. DOOLEY, M.D.,† former health associate, Community Service Society, has been appointed executive director, National Cancer Foundation, New York City.

ALFRED J. FLETCHER,† former sanitarian, Carolina County (Md.) Health Department, Denton, is now sanitarian II, Talbot County Health Department, Easton, Md.

NICHOLAS J. FIUMARA, M.D.,* director, Division of Venereal Diseases, Massachusetts Department of Health, Boston, has been appointed also clinical assistant in dermatology, Massachusetts General Hospital.

RALPH L. FRANCE,* head, Department of Bacteriology and Public Health, University of Massachusetts, is on a two-year leave as professor of microbiology, Basic Medical Sciences Institute set up in Karachi, Pakistan.

LOUIS W. FRAZIER, formerly on the staff of the Cleveland Press, is now on the staff of the Cleveland (Ohio) Health Museum in a development-public relations capacity.

JULES FREUND, M.D., chief, Division of Applied Immunology, Public Health Research Institute of the City of New York, has been appointed a consultant to the National Institute of Allergy and Infectious Diseases, Bethesda, Md.

PAUL O. GILLILAND, M.D., recently retired army medical officer, has been appointed public health officer of Houston County, Alabama, succeeding THOMAS J. FLOYD, M.D., retired because of poor health, who will supervise public health work in Henry County on a part-time basis.

HELEN L. GILLUM, PH.D.,† associate professor, University of California at Berkeley, recently received the 1956 Borden Award for fundamental research in the field of nutrition and experimental foods in recognition of her part in organizing and carrying out

* Fellow.
† Member.

a study of the nutritional status of the aging.

MYRTLE GREENFIELD, M.S., B.A.,* laboratory director, New Mexico State Health Department, Albuquerque, has retired and was recently honored by the State Board of Health at a dinner in recognition of her 36 years of service.

WILLIAM A. HADFIELD † of the Pennsalt Chemicals technical staff, has retired after a 41-year career as a sanitarian, pioneering chiefly in the field of chlorine sanitation on the farm and in dairy plants.

RUSSELL W. HART,* former regional engineer, Kansas City Office, Public Health Service, is now regional engineer, San Francisco Office.

GERHARD HARTMAN, PH.D.,† superintendent, State University of Iowa Hospitals, Iowa City, is in Australia on an educational program in hospital administration at Australia's New South Wales University of Technology. His trip is sponsored by the W. K. Kellogg Foundation.

EDWARD R. HERMANN, C.E.,* doctoral candidate and research engineer, University of Texas, has been placed on active duty with the Division of Sanitary Engineering, Public Health Service, as a summer consultant in cooperation with the Texas State Health Department, Austin.

GERD W. LAGARIE, M.D.,† who has an M.P.H. degree from Johns Hopkins School of Public Health and was most recently microbiologist of the North-Rhine-Westphalia, has been appointed commissioner of health, Essen, Germany.

OLIVER R. MCCOY, M.D.,* has resigned from the Rockefeller Foundation where he had been assigned to Japan, to become associate director, China Medical Board of New York.

PETER MEEK,† former assistant director, Commission on Chronic Illness, has been appointed director of the New York City Office, National Society for Crippled Children and Adults.

HARRY B. MILLHOFF, D.D.S., chief of the Dental Division, Ohio Department of Health, Columbus, has retired.

MADELEINE E. MORCY, M.D., M.P.H.,† regional medical director of the Children's Bureau, has been transferred from the Chicago Region to Region III with headquarters in Charlottesville, Va.

KAARLO NASI,* sanitary engineer director, former assistant chief, Water Supply and Water Pollution Control Branch, Public Health Service, has been transferred to the Federal Civil Defense Administration, Battle Creek, Mich., as chief, Emergency Sanitation Division, Health Office.

HILDA NEELY, R.N.,† director of nursing services, Chicago (Ill.) Red Cross Chapter, has resigned after a long and distinguished career in nursing that began with the Chicago Chapter in 1934.

MARGARETHE OAKLEY, chemist, Bureau of Laboratories, Maryland State Department of Health, Baltimore, has been elected the first woman president of the Central Atlantic States Association of Food and Drug Officials, the only woman to hold office in the 40 years of this organization's existence.

W. PARKER PIERCE, PH.D.,† former consultant, American Institute of Baking, has been appointed director of sanitation, Arnold Bakers, Inc., Port Chester, N. Y.

JOYCE QUICK, former anatomy instructor, Depauw University, has been added to the educational staff, Cleveland (Ohio) Health Museum.

FRANK R. SHAW,† sanitary engineer director, engineer officer of the Public Health Service Commissioned Corps assigned to the New England Field Training Station, University of Massachusetts, has retired and is living at Wellesley Hills, Mass.

ROBERT S. SHAW, former chief public health engineer, has been named assistant director, Division of Environmental Sanitation, New Jersey State Department of Health, Trenton.

JAMES R. SIMPSON,† chief sanitary engineer, Federal Housing Administration, Washington, D. C., has been borrowed from his regular duties to head the organization phase of a technical studies program that is being organized in the Architectural Standards Division to evaluate new home construction materials and make recommendations.

GEORGE A. SPENDLOVE, M.D.,† former director, Utah State Health Department, is now assistant director, Washington State Department of Public Assistance, in charge of the Medical Care Program, Olympia.

MARY LEE TAYLOR,† former associate dean and associate professor of nursing, Emory University School of Nursing in Atlanta, has been named director of public health nursing, Austin-Travis County Health Department, Tex.

JAMES CLAUDE THOMSON, M.P.H., PH.D.,† formerly director, Nutrition Research Institute, and professor of biochemistry and nutrition, International Christian University of Tokyo, and more recently nutrition consultant on the Joint FAO/WHO/UNICEF Pakistan Milk Survey Team, has returned to his assignment in Tehran, as WHO nutri-

* Fellow.
† Member.

tion consultant to the Ministry of Health of Iran.

JEROME J. VAN GASSE, M.D.,† health officer, Jackson (Mich.) Department of Health, represented the United States and Michigan at the Tenth International Conference on Alcoholism, presenting a paper on the use of tranquilizing drugs in outpatient treatment of the alcoholic before the representatives of 83 nations participating in the conference.

HELEN M. WALLACE, M.D.,* former professor of preventive medicine, New York Medical College, is now on the faculty of the University of Minnesota School of Public Health, Minneapolis, in a new program for more intensive study and instruction in maternal and child health.

ALBERTA B. WILSON,* chief, Section of Public Health Nursing, Minnesota Department of Health, Minneapolis, is the new president, Minnesota League for Nursing.

MARY E. YOUNG,† former patient education coordinator, Wisconsin Anti-Tuberculosis Association, is now on the health education staff of the Tuberculosis Institute of Chicago and Cook County, Chicago, Ill.

ROBERT ZERWEKH has succeeded DANIEL KNOTT as milk plant sanitarian, Peoria (Ill.) Health Department.

DEATHS

ELIZABETH Q. AMMERMAN, member of the Physical Therapy Section of the New York State Public Health Association and chairman of their 1955–1956 Committee on Nominations.

WILLIAM F. COGSWELL, M.D., Montana state health officer from 1912–1946 on May 26 at the age of 87.

LAVINIA LLOYD DOCK, author of, "A History of Nursing," and, "History of American Red Cross Nursing," at the age of 99.

ELIZABETH M. GARDINER, M.D.,* of Bennington, Vt., on July 8 (Maternal and Child Health Section).

WILLIAM E. HASKELL, V.M.D.,† former senior milk specialist, Public Health Service, who had recently gone to Jacksonville, Fla., for semiretirement, on May 22 (Unaffiliated).

CONFERENCES AND DATES

American Public Health Association, 84th Annual Meeting, Atlantic City, N. J. Headquarters: Convention Hall, Atlantic City, N. J., November 12–16, and Related Organizations, including:

American Association of Public Health Physicians
American Association of Registration Executives
American Board of Preventive Medicine, Inc.
American College of Preventive Medicine
American Psychiatric Association, Public Health Committee of the
American School Health Association
Association of Business Management in Public Health
Association of Labor Health Administrators
Association of Reserve Officers of the U. S. Public Health Service
Association of Schools of Public Health
Association of State Maternal and Child Health and Crippled Children's Directors
Association of State and Territorial Public Health Nutrition Directors
Association of Teachers of Preventive Medicine
Commissioned Officers Association of the U. S. Public Health Service
Conference of Directors of Public Health
Conference on Medical Care Teaching
Conference of Municipal Public Health Engineers
Conference of Nurse Directors
Conference of Public Health Veterinarians
Conference of State Directors of Public Health Training
Conference of State and Provincial Public Health Authorities of North America
Conference of State and Provincial Public Health Laboratory Directors
Division of International Health, Public Health Service
Intersociety Committee on Laboratory Problems Related to Health
Military Government-Civil Affairs Public Health Society
National Advisory Council, Cleveland Health Museum
National Association of Sanitarians Regional Educational Conference
National Citizens Committee for the World Health Organization
National Conference for Health Council Work
National Sanitation Foundation Council of Consultants
National Tuberculosis Association
Nurse Mental Health Consultants
Public Health Cancer Association
Society of Public Health Educators
State Sanitary Engineers

State and Regional Public Health Meetings:

Florida Public Health Association. Clearwater, Fla. October 18–20.
Minnesota Public Health Association. Minneapolis, Minn. September 27–28.

* Fellow.
† Member.

New Mexico Public Health Association. Albuquerque, N. M. October 17–19.
South Dakota Public Health Association. Custer, S. D. September 12–14.
Washington Public Health Association. Longview, Wash. September 30–October 2.

Meetings of Other Organizations Coming in September, October, and November, 1956:

American Academy of Pediatrics. New York, N. Y. October 6–11.
American Association of Medical Record Librarians. Washington, D. C. October 1–5.
American Chemical Society. Atlantic City, N. J. September 16–21.
American Dental Association. Atlantic City, N. J. October 1–4.
American Dietetic Association. Milwaukee, Wis. October 9–12.
American Heart Association. Cincinnati, Ohio. October 27–31.
American Hospital Association. Palmer House, Chicago, Ill. September 17–20.
American Occupational Therapy Association. Minneapolis, Minn. October 1–4.
American Veterinary Medical Association. San Antonio, Tex. October 15–18.
Association of American Medical Colleges. Colorado Springs, Colo. November 12–14.
Family Service Association of America. Cincinnati, Ohio. November 14–17.
Federation of Sewage and Industrial Wastes Associations. Los Angeles, Calif. October 8–11.
International Congress on Medical Records (Second). Shoreham Hotel, Washington, D. C. October 1–5.
National Association for Mental Health. Washington, D. C. November 29–December 1.
National Recreation Association—Recreation Congress. Philadelphia, Pa. September 30–October 5.
National Safety Council. Conrad Hilton Hotel, Chicago, Ill. October 22–26.
National Society for Crippled Children and Adults. Hotel Statler, Washington, D. C. October 28–31.
Pan American Sanitary Organization—WHO Regional Committee for the Americas. Guatemala, C. A. September 16–20.
United Cerebral Palsy. Cincinnati, Ohio. November 9–11.
World Medical Assembly. Havana, Cuba. October 9–14.

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Chicago Office, Theatre, and Amusement Building Janitors' Union, Local 25, Chicago, Ill.
Chlorine Institute, Inc., New York, N. Y.
Congress of Industrial Organizations, Washington, D. C.
Difco Laboratories, Detroit, Mich.
Diversey Corporation, Chicago, Ill.
Equitable Life Assurance Society of the United States, New York, N. Y.
Grand Concourse Medical Group, New York, N. Y.
Hellige, Inc., Garden City, N. Y.
Hoffmann-La Roche, Inc., Nutley, N. J.
International Association of Ice Cream Manufacturers, Washington, D. C.
International Association of Machinists, Washington, D. C.
International Equipment Company, Boston, Mass.
International Union, UAW, Detroit, Mich.
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Life Insurance Company of Virginia, Richmond, Va.
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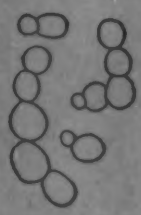

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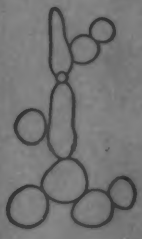

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